

REDESCRIPTION OF SYCOPHAGINAE FROM CEYLON AND INDIA, WITH DESIGNATION OF LECTOTYPES, AND A WORLD CATALOGUE OF THE OTITESSELLINI (HYMENOPTERA CHALCIDOIDEA, TORYMIDAE)

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ABSTRACT

Redescription of fig insects from India and Ceylon, and designation of lectotypes (*). —

(1) from *Ficus benghalensis* L.: *Walkerella temeraria* * Westwood, 1883 (new syn., *Terastiozoon keralensis* Joseph, 1957; *Terastiozoon Grandi*, 1921, a syn. of *Walkerella* Westwood, 1883); *Micranisa pteromaloides* (Walker, 1871) (*Idarnes pteromaloides* * Walker; new syn., *Sycobiella saundersii* * Westwood, 1883; *Sycobiella* Westwood, 1883, a syn. of *Micranisa* Walker, 1875); *Sycoscapter stabilis* (Walker, 1871) (*Idarnes stabilis* * Walker; *I. orientalis* * Walker, 1875; *Sycoscapter insignis* * Saunders in Westwood, 1883); *Sycoryctes* spec.; *Philotrypesis transiens* (Walker, 1871) (*Idarnes transiens* * Walker; *Polanisa lutea* * Walker, 1875; *Polanisa* Walker, 1875, an older syn. of *Philotrypesis* Förster, 1878, but it should be suppressed and *Philotrypesis* validated); *Philotrypesis affinis* (Westwood, 1883) new comb. (*Sycoscapella affinis* * Westwood; *Sycoscapella* Westwood, 1883, a syn. of *Philotrypesis* Förster, 1878; new syn., *Philotrypesis travancoricus* Joseph, 1954); *Philotrypesis* spec.

(2) from *Ficus religiosa* L.: *Otitesella digitata* * Westwood, 1883 (new syn., *O. religiosa* * Westwood, 1883); *Sycoscapteridea monilifera* (Westwood, 1883) (*Sycoscapter monilifer* * Westwood; new syn., *S. gracilipes* * Westwood, 1883); *Sycoryctes religiosae* spec. nov., from Pusa, Bihar; *Philotrypesis anguliceps* (Westwood, 1883) new comb. (*Sycoscapella* ? *anguliceps* * Westwood; *Sycoscapterella* Ashmead, 1904, a syn. of *Philotrypesis* Förster, 1878).

(3) from *Ficus exasperata* Vahl: *Philotrypesis quadrisetosa* (Westwood, 1883) (*Sycoscapella* ? *quadrisetosa* * Westwood).

A preliminary catalogue of the tribe Otitesellini includes several new combinations in *Walkerella* Westwood and *Micranisa* Walker.

INTRODUCTION

In a recent publication on the classification of the Indo-Australian Sycophaginae (WIEBES, 1966), several had to be listed as genera incertae sedis. Now, through Drs. M. DE V. GRAHAM (Hope Department of Entomology, Oxford University Museum; abbreviated OUM in the text) and J. F. PERKINS (British Museum, Natural History, London; BM), old materials of SAUNDERS, WALKER, and WESTWOOD have been made available for study, and most of the doubtful genera can be assigned to their proper tribes. Of many species, recent samples from the collections of the Hawaiian Sugar Planters' Association, Honolulu (HSPA), and of the Rijksmuseum van Natuurlijke Historie, Leiden (RMNH) could be compared with the typical samples. Collections of fig insects from *Ficus benghalensis* L., made

by Drs. M. H. ANSARI, Allahabad, and D. S. HILL, Kampala, provided very useful data on the variability of some species. Dr. HILL allowed me to use some unpublished data from his observations on fig insects in Hong Kong, which courtesy is here gratefully acknowledged.

It should be noted that the classification of the Sycophaginae as proposed by me in 1966, was slightly altered by HILL (1967). He accommodated the Sycophiini in the Epichrysomallinae, a new subfamily of the Torymidae, and erected a new tribe Sycoecini in the Sycophaginae for the reception of several African genera and the Indo-Malayan *Diaziella* Grandi.

Many of the genera of the Sycophaginae were based on species from the receptacles of *Ficus benghalensis* L. (*F. Indica* of older authors), *F. religiosa* L., and *F. exasperata* Vahl (*F. asperima* Roxb.). These species are redescribed in the present paper; for many of them lectotypes could be chosen from the material in the BM and in the OUM.

Finally, a catalogue is presented of the tribe Otitesellini.

SYCOPHAGINAE FROM *Ficus benghalensis* L.

Sycophagine fig wasps from *Ficus benghalensis* L. (synonym, *Ficus indica* L.) were described by WALKER (1871, 1875), WESTWOOD (1883a), SAUNDERS in WESTWOOD (1883a), and JOSEPH (1953, 1954, 1957). The type series of several old species could be located, and the specimens to be designated lectotype recognized from the data and figures in WESTWOOD (1883a). The most unsatisfactory descriptions by WALKER, however, do not permit of easy recognition, and the decision as to which specimen should be chosen lectotype proved to give as many difficulties to me as it did to previous authors.

In 1962 (WIEBES in CHINA, 1962 : 162) I suggested that the International Commission on Zoological Nomenclature should suppress the generic name *Polanisa* Walker, 1875. CHINA (loc. cit.), however, as well as earlier GRANDI (1921 : 92—93, 102 nota; 1930 : 53, 61 nota; cf. HOFFMEYER, 1933 : 248—249), preferred to let the name remain a nomen dubium.

Now a similar problem arises in several genera and species described by WALKER in the same papers in which *Idarnes transiens* and *Polanisa lutea* were named. Here, however, there is no such large literature as in the case of *Philotrypesis* Förster, 1878 (in my opinion, a younger synonym of *Polanisa* Walker, 1875) necessitating the suppression of WALKER's names. A short historical sketch may facilitate the discussion of these names.

In 1871, in his "Notes on Chalcididae IV", WALKER described wasps "observed in the figs of *Ficus Indica*, in Hindostan, by Sir Walter Elliott". In a later paper but, according to PATTON (1884 : xvi), actually from notes made prior to the publication of 1871, descriptions were published of "insects destructive to the fig in India" (posthumous publication by WALKER, 1875, communicated by F. SMITH). WESTWOOD (1883a : 29—30), SAUNDERS (1883b : 388), and also MAYR (1885 : 151—152) commented upon these publications by WALKER, but only WESTWOOD (1883a) redescribed some of the species. Moreover, WESTWOOD (1883a : 29) noted the provenance of WALKER's material: "found at Madras in

the months of December, 1856, -7, -8, and -9, by Sir Walter Elliott". PATTON (1884 : xvi—xvii) gave a list of WALKER's genera and species, and synonymized several of the names. Later, however, various other names were introduced, and most of WALKER's names were not used. See table 1 of the present paper for a concise survey.

Table 1. Survey of nomenclatorial changes in the Sycophaginae from *Ficus benghalensis* L., *F. religiosa* L. and *F. exasperata* Vahl

previous names	names used in present paper
SYCORYCTINI	
<i>Idarnes stabilis</i> Walker, 1871, ♀ <i>Idarnes orientalis</i> Walker, 1875, [♀] <i>Sycoscapter insignis</i> Saunders, 1883, ♂ <i>Sycoscapter stabilis</i> ; Grandi, 1928 <i>Indothymus crenulatus</i> Joseph, 1953, ♀	<i>Sycoscapter stabilis</i> (Walker), ♂, ♀
<i>Sycoscapter monilifer</i> Westwood 1883, [♂] <i>Sycoscapter gracilipes</i> Westwood, 1883, ♂ <i>Sycoscapteridea monilifera</i> ; Ashmead, 1904, ♂	<i>Sycoscapteridea monilifera</i> (Westwood), ♂, ♀
PHILOTRYPINI	
<i>Idarnes transiens</i> Walker, 1871, ♀ <i>Polanisa lutea</i> Walker, 1875, [♀] <i>Idarnella transiens</i> ; Westwood, 1883, al. ♂, ♀ <i>Polanisa transiens</i> ; Patton, 1884 <i>Philotrypes transiens</i> ; Grandi, 1930, ♂, ♀	<i>Philotrypes transiens</i> (Walker), ♂, ♀
<i>Sycoscaptella affinis</i> Westwood, 1883, ♂ <i>Philotrypes travancoricus</i> Joseph, 1954, ♂	<i>Philotrypes affinis</i> (Westwood), ♂, ♀
<i>Sycoscaptella</i> ? <i>anguliceps</i> Westwood, 1883, ♂ <i>Sycoscapterella anguliceps</i> ; Ashmead; 1904, ♂	<i>Philotrypes anguliceps</i> (Westwood), al. ♂, ♀
<i>Sycoscaptella</i> ? <i>quadrissetosa</i> Westwood, 1883, ♂ <i>Sycoscaptella</i> ? <i>quadrissetosa</i> ; Westwood, 1883, ♀ <i>Idarnodes quadrissetosa</i> ; Westwood, 1883 <i>Tetranemopteryx quadrissetosa</i> ; Ashmead, 1904, ♂ <i>Philotrypes quadrissetosa</i> ; Grandi, 1921 ? <i>Philotrypes quadrissetosa</i> ; Joseph, 1954, ♂, ♀	<i>Philotrypes quadrissetosa</i> (Westwood), ♂, ♀
OTITESSELLINI	
<i>Otitesella digitata</i> Westwood, 1883, ♂ <i>Otitesella religiosa</i> Westwood, 1883, ♂	<i>Otitesella digitata</i> Westwood, ♂, ♀
<i>Sycobia bethyloides</i> Walker, 1871, "neuter ?" <i>Walkerella temeraria</i> Westwood, 1883, ♂ <i>Terastiozoon keralensis</i> Joseph, 1957, ♂	<i>Walkerella temeraria</i> Westwood, ♂
<i>Idarnes pteromaloides</i> Walker, 1871, ♀ <i>Micranisa</i> Walker, 1875, [♀] <i>Sycobiella saundersii</i> Westwood, 1883, ♂ <i>Micranisa pteromaloides</i> ; Patton, 1884 <i>Sycobiella saundersii</i> ; Wiebes, 1964, ♂	<i>Micranisa pteromaloides</i> (Walker), ♂, ♀

WATERSTON, while in search for the types of *Polanisa lutea* Walker on request of GRANDI, considered the possibility that a specimen labelled "*transiens*" in WALKER's hand, collected by ELLIOTT at "Meerut", formed part of the type series (GRANDI, 1921 : 102 nota; 1930 : 61 nota; "una ♀ ... deve riguardarsi secondo il Waterston, e con ragione, come *tipo*"). Several of the specimens that I have on loan from the British Museum, are labelled "Murutt. Sir W. Elliott. 81—107", and from these series I have chosen the specimens that served for lectotype designation in the present paper. Presumably, Murutt is the same as Murud, just south of Bombay.

Several specimens from Calcutta that I have on loan from the Hope Department, Oxford University Museum, bear syntype labels, but of some the syntypal status may be doubted. Even if WALKER's original material contained specimens from Calcutta, there is a possibility of confusion with material collected by J. WOOD-MASON ("in the Botanical Gardens at Calcutta on the 15th of May", SAUNDERS, 1883a : 1), in the year 1880 as is evident from a label in the BM collection. In one instance, where no other material was available, I have chosen a specimen from Calcutta as the lectotype for WALKER's species.

Walkerella temeraria Westwood

(Fig. 2—7)

Sycobia bethyloides [in part, "neuter ?" only] Walker, 1871, Notes on Chalcidae 4 : 61, 62 (descr. [♂], Hindostan, ex *Ficus Indica*, leg. W. Elliott).

Walkerella temeraria Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 33, pl. 4 fig. 9—12 (descr. ♂, "neuter ?" of *Sycobia bethyloides* Walker).

Terastiozoon keralensis Joseph, 1957, Ann. Soc. ent. France 125 : 124—126, fig. XV (descr. ♂, Trivandrum, India, Bot. Gdns., ex *Ficus bengalensis* L., leg. K. J. Joseph, 25.V.1950); Wiebes, 1966, Tijdschr. Ent. 109 : 165 (probably identical with *Walkerella temeraria* Westwood). *Syn. nov.*

Material. — 3 ♂, Murutt. Sir W. ELLIOTT. 81—107; viz. one with an old label: *Sycobia bethyloides*, two with a label: *Sycosia* [sic!] *bethyloides*, all with a recent label: *Walkerella*. One specimen slide-mounted and used for the illustrations of the present paper (BM).

1 ♂, *Sycobia bethyloides*. From British Mus. 1880; as this is evidently the specimen figured by WESTWOOD, it is now designated lectotype of *Walkerella temeraria* Westwood (OUM).

Male. — The description of *Terastiozoon keralensis* by JOSEPH (1957) fits well with the present males from Murutt. Some additions, and the accompanying figures, may elucidate characters that are not clear from JOSEPH's description.

Head, Fig. 2. Antenna (Fig. 5) consisting of ten segments; one anellus.

Thorax, Fig. 2. The propodeum is partly separated from the metanotum; small dents at the lateral edges of the thoracic dorsum just posterad of the place of insertion of the wing remnant, indicate the boundary between meso- and metanotum. Fore leg (Fig. 3—4): the tibial armature consists of: rather long spines along the distal half of the dorsal margin, a group of five or six unequal spines at the antiaxial apex, four spines in the ventral angle antiaxial of the bifid ventral spur, one axial spine close to the spur, and one spine (next to two stout setae) at the

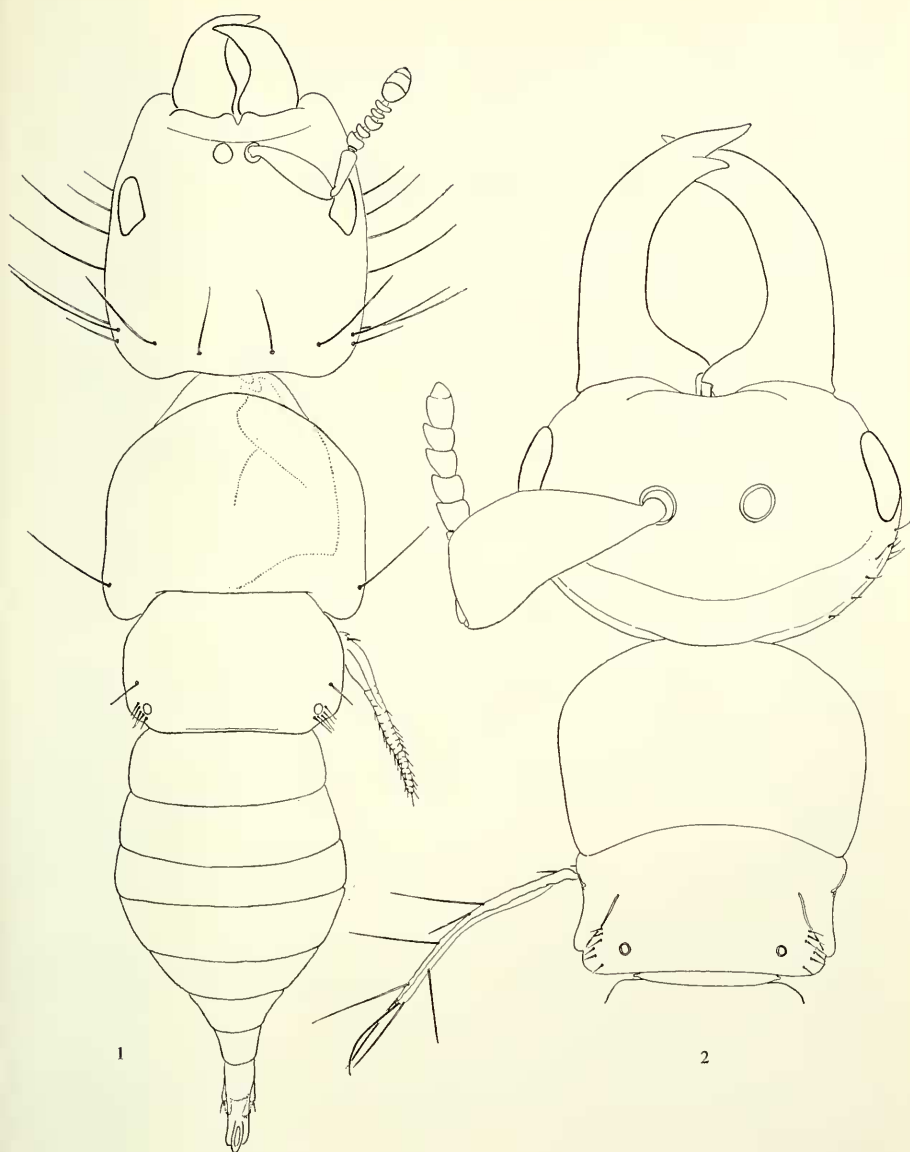


Fig. 1. *Sycosapter stabilis* (Walker), male from Allahabad (RMNH 783), dorsal aspect of body; $\times 60$. Fig. 2. *Walkerella temeraria* Westwood, male (BM), dorsal aspect of head and thorax (pubescence for the greater part omitted); $\times 60$

axial apex. Mid leg (Fig. 6): five anti-axial spines and stout setae, and two axial spines, occur at the ventral angle of the tibia, close to the simple ventral spur. Hind leg (Fig. 7): six spines, all of which visible in anti-axial aspect, accompany the simple tibial spur; the axial apex of the tibia bears a row of setae. All tarsi have four segments.

Remark. — The identification of *Walkerella temeraria* with a species of *Terastiozoon*, makes *Terastiozoon* Grandi, 1921, a subjective junior synonym of *Walkerella* Westwood, 1883.

BALTAZAR (1966 : 109) listed "*Walkerella*" as a synonym of *Polynema* Haliday, 1883.

Micranisa pteromaloides (Walker)

(Fig. 8—15)

Idarnes pteromaloides Walker, 1871, Notes on Chalcidiae 4 : 63 (descr. ♀, Hindostan, ex *Ficus Indica*, leg. W. Elliott); Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 38—39 (note).

Micranisa Walker, 1875, Entomologist 8 : 18 (descr. [♀], India; no species mentioned); Patton, 1884, Proc. ent. Soc. Lond. 1884 : xvii (synonymy of *Micranisa* and *Idarnes pteromaloides*).

Sycobiella saundersii Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 34, pl. 5 fig. 13—19 (descr. ♂, Calcutta, India, ex *Ficus Indica*, leg. J. Wood-Mason); Joseph, 1957, Ann. Soc. ent. France 125 : 127 (♂, Trivandrum, India, Bot. Gdns., ex *Ficus benghalensis* L., leg. K. J. Joseph, 25.VI.1950); Wiebes, 1964, Zool. Meded. 39 : 24, fig. 6—8, 19 (descr. ♂, Allahabad, India, ex *Ficus benghalensis* L., leg. M. H. Ansari). Syn. nov.

Material. — 1 ♀, Murutt. Sir W. ELLIOTT. 81—107; now designated lectotype of *Idarnes pteromaloides* Walker (BM).

1 ♀, Calcutta, India; indicted as syntype of *Idarnes pteromaloides* Walker (OUM).

1 ♀, Calcutta, India, ex *F. Indica*; on same pin with *Sycoscapter stabilis* ♀, indicated as syntype of *Idarnes pteromaloides* (OUM).

1 ♀, Calcutta, India, (W[OOD]. M[ASON]. 1880, ex coll. S. SAUNDERS 84—31; on one pin with *Sycoscapter stabilis* ♀ (BM).

2 ♀, ex coll. S. SAUNDERS 84—31; each on one pin with *Sycoscapter stabilis* ♀ (BM).

3 ♀ on two slides, the one labelled: *F. Indica*. W.M. (2 specimens), the other: Calcutta. W.M. (one specimen, dissected) (BM).

6 ♀, Calcutta, India, Victoria Park, ex *Ficus benghalensis* L., leg. D. S. HILL, 23.VIII.1963 (RMNH 1114, slides 1114 a-b, part of a longer series in coll. HILL).

4 ♂, 5 ♀, Allahabad, India, ex *Ficus benghalensis* L., leg. M. H. ANSARI (RMNH 686, ♂ slide 686a).

6 ♂, 1 ♂ head, Calcutta, India, ex *Ficus Indica*; viz. one slide in BM: 2 ♂, 1 ♂ head, on same slide with *Sycoscapter stabilis* ♂, the male in the upper right hand corner is now designated lectotype of *Sycobiella saundersii* Westwood; and one slide (4 ♂) in OUM.

Female. — Head shorter than wide across the compound eyes (3 : 4); the toruli of the antennae approximately in the middle of the face, situated in a shallow longitudinal groove running from the stomal edge to the median ocellus. Distance between the toruli two-thirds of their distance to the inner margin of the eye. Epistomal margin with two prominent lobes. Antenna (Fig. 8) consisting of thirteen segments; three anelli; the club three-segmented; the scape (including the proximal portion) five times as long as wide; the pedicel one-third of the length of the scape; the seventh to tenth segments subequal, with rather regular whorls



Fig. 3—7. *Walkerella temeraria* Westwood, male (BM). 3, distal part of fore tibia, and tarsus, antiaxial aspect; 4, apex of fore tibia, and metatarsus, axial aspect; 5, antenna, dorsal aspect of proximal segments; 6, distal half of mid tibia, and tarsus, antiaxial aspect; 7, hind tibia and tarsus, antiaxial aspect. Fig. 8—15. *Micranisa pteromaloides* (Walker), female from Calcutta (RMNH 1114). 8, antenna, axial aspect of proximal segments; 9, apex of fore tibia, and metatarsus, axial aspect; 10, apex of fore tibia, and tarsus, antiaxial aspect; 11, hind tibia and tarsus, antiaxial aspect; 12, labial palp, ventral aspect; 13, maxillary palp, ventral aspect; 14, mandible, ventral aspect; 15, scutellum, dorsal aspect. Fig. 3—7, 11,

× 160; 8—10, 12—14, × 250; 15, × 100

of oblong sensilla, and long basal setae. Labial palp (Fig. 12) consisting of two segments, subequal in length; the maxillary palp (Fig. 13) four-segmented (5 : 4 : 2 : 10); the mandible (Fig. 14) tridentate, with three glands.

Thorax. Pronotum short, only the lateral parts visible in dorsal aspect; the scutum large, the parapsidal furrows complete; the scutellum (Fig. 15) wider than long (9 : 7); the propodeum short medially, widening laterad, with approximately eight long setae next to the circular spiracular peritremata. Fore wing (2 : 1), 1.1 mm long; the submarginal, marginal, stigmal, and postmarginal veins approximately in ratio 22 : 10 : 6 : 7, the submarginal with two pustules, the stigmal with four; the membrane hyaline, with microtrichae in the distal two-thirds, with some stouter setae along the marginal and postmarginal veins, and with two or three large setae in the cell above the submarginal; the fringe very short. Hind wing (3 : 1), 0.8 mm long, with microtrichae as in the fore wing; the fringe of normal length. Fore leg (Fig. 9—10): the coxa, femur, and tibia (faintly) with reticulate sculpture and rather sparse setae; the femur as long as the tibia and the first two tarsal segments combined; the apical armature of the tibia consisting of two spines at the dorsal angle, and several stout setae next to the long, bifid ventral spur; five tarsal segments (6 : 4 : 4 : 3 : 7), all but the fifth with a pair of ventro-apical spines, the metatarsus with ventral spines. Mid leg slender, sparsely pubescent; the tibia as long as the femur and trochanter combined, with one ventral spur; five tarsal segments (15 : 5 : 4 : 4 : 3), all, including the fifth, with a pair of stout ventro-apical spines. Hind leg (Fig. 11): the coxa nearly as long as the femur, with reticulate sculpture, and with about eight long setae in the dorso-apical axial angle; the femur with reticulate sculpture, the antiaxial disc with scattered setae, the axial with a longitudinal row of setae; the tibia slightly longer than the femur, pubescent antiaxially, less distinctly so axially, with a row of spines along the distal half of the dorsal margin and with stout dorsal and ventral marginal setae, the ventro-apical armature consisting of two unequal spurs and a few antiaxial spines, and a row of slender spines along the axial, apical margin; five tarsal segments (12 : 6 : 4 : 3 : 5), the first four with a pair of stout ventro-apical spines.

Gaster. The pygostyles of the ninth urotergite with four long setae; the valvae and the ovipositor short.

Length, ca. 1.8 mm. Colour shiny metallic bluish black; the antennae, mouthparts, and legs yellowish, but the coxae dark brown, and the hind femora with a light brown patch on the antiaxial discs.

Remarks. — Up to now, *Micranisa pteromaloides* is the only female Otiteselline known from the receptacles of *Ficus benghalensis*, from which two male Otitesellini were described. I do not hesitate to consider, judging from their simultaneous occurrence in the samples studied, *Micranisa pteromaloides* the female sex of *Sycobiella saundersii*. A similar association was found in *Otitesella luzonensis* Wiebes and *O. corneri* Wiebes (from *Ficus sumatrana* Miq. and *F. sundaica* Bl., respectively), which on the morphology of the females were assigned to *Otitesella* Westwood, notwithstanding aberrant features of the males (WIEBES, 1967 : 132—133). I still cannot distinguish generically between *Micranisa*, the females

of '*Otitesella*' mentioned above, and those of *Otitesella* as described by GRANDI (1922). The males of *Otitesella* are easily distinguished by the configuration of the thorax.

Micranisa pteromaloides (Walker), *Otitesella luzonensis* Wiebes, *O. corneri* Wiebes, and *Sycobiella claviscapa* Joseph (1957; from *Ficus drupacea* Thunb.), are here united in one genus *Micranisa* Walker. They form two species groups, recognizable e.g. by the shape of the male antennal scape (dilated in *M. pteromaloides* and *claviscapa*, more slender in *M. corneri* and *luzonensis*).

For comments on *Sycobiella boschmai* Wiebes and *S. monstrosa* Grandi, see the chapter on Otitesellini below.

Sycoscapter stabilis (Walker)

(Fig. 1, 16—35, tables 2—3)

Idarnes stabilis Walker, 1871, Notes on Chalcidiae 4: 62 (descr. ♀, Hindostan, ex *Ficus Indica*, leg. W. Elliott); Westwood, 1883, Trans. ent. Soc. Lond. 1883: 38 (note); Patton, 1884, Proc. ent. Soc. Lond. 1884: xvii (syn.: *Idarnes orientalis* Walker); Mayr, 1885, Verh. zool.-bot. Ges. Wien 35: 152 (in *Sycoryctes* Mayr?).

Idarnes orientalis Walker, 1873, Entomologist 8: 17 (descr. [♀], India).

Sycoscapter insignis Saunders in Westwood, 1883, Trans. ent. Soc. Lond. 1883: 35, pl. 5 fig. 20—29 (descr. ♂, ♀ [recte, ♂ only: see p, viii, errata], Calcutta, India, ex *Ficus Indica*, leg. J. Wood-Mason); Joseph, 1957, Ann. Soc. ent. France 125: 107 (syn.: *Indothymus crenulatus* Joseph); Wiebes, 1964, Nova Guinea, Zool. 27: 83 (cat., possible syn. of *Idarnes stabilis* Walker).

Indothymus crenulatus Joseph, 1953, Agra Univ. J. Res. 2: 77—81, fig. 73—86 (descr. ♀, Trivandrum, India, Bot. Gdns., ex *Ficus bengalensis* L., leg. K. J. Joseph, 15.VI.1950).

Sycoscapter stabilis Grandi, 1928, Bull. Soc. zool. France 53: 81—82 (♂, ♀, Trichinopolis, India, 250 m alt., ex *Ficus benghalensis*, leg. E. Gombert, 20.IV.1914).

Material. — 1 ♀, Calcutta, India; indicated as syntype of *Idarnes stabilis* Walker, now designated lectotype of *Idarnes stabilis* Walker, and of *Idarnes orientalis* Walker (OUM).

1 ♀, Calcutta, India, ex *Ficus Indica*; on one pin with *Micranisa pteromaloides* ♀ (which was evidently regarded as the male of *Idarnes stabilis*), indicated as syntype of *Idarnes stabilis* (OUM).

2 ♂, Calcutta, India, ex *Ficus Indica*, leg. WOOD-MASON; viz. one dried specimen (the locality not mentioned on the label) in OUM (indicated as syntype of *Sycoscapter insignis* Saunders in Westwood¹), and now designated lectotype), and one in BM.

9 ♂, Calcutta, India, ex *Ficus Indica*; viz. one dried specimen (BM), five (two defect) mounted on one slide with *Sycobiella saundersii* (BM), one slide-mounted (BM), two on one slide (OUM). These are probably part of the sample previously listed, but are not distinctly labelled as such and may have belonged to the next.

3 ♂, Calcutta, India, ex *Ficus Indica*, leg. ROTHNEY; viz. one slide-mounted, two dried (BM).

¹) One other male bears a syntype label of *Sycoscapter insignis*, but it belongs to *Philotrypesis transiens* (Walker).

1 ♀, Calcutta, India, W.M. 1880. ex coll. S. SAUNDERS 84—31; on one pin with *Micranisa pteromaloides* (BM).

2 ♀, ex coll. S. SAUNDERS 84—31; each on one pin with *Micranisa pteromaloides* (BM).

26 ♂, 17 ♀, Calcutta, India, Victoria Park, ex *Ficus benghalensis* L., leg. D. S. HILL, 23.VIII.1963 (RMNH 1111, slides 1111 a-b, part of a longer series in coll. HILL).

Series ♀, Pusa, Bihar, India, ex *Ficus benghalensis*, leg. S. R. DUTT, V—VI. 1921 (HSPA).

Series ♂, Pusa, Bihar, India, ex *Ficus benghalensis*, leg. S. R. DUTT, II.1922 (HSPA).

4 ♂, 5 ♀, Allahabad, India, ex *Ficus benghalensis* L., leg. M. H. ANSARI (RMNH 783, slides 783 a-c).

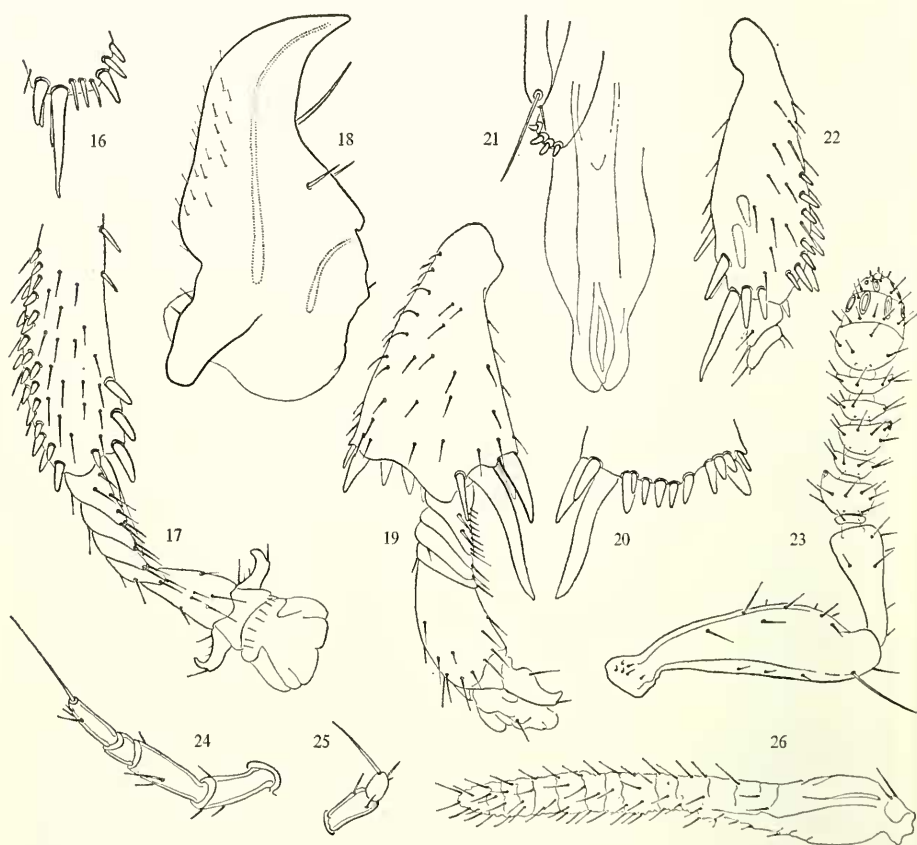


Fig. 16—26. *Sycosapter stabilis* (Walker), male from Allahabad (RMNH 783). 16, apex of hind tibia, axial aspect; 17, apex of hind tibia, and tarsus, antiaxial aspect; 18, mandible, ventral aspect; 19, fore tibia and tarsus, antiaxial aspect; 20, apex of fore tibia, axial aspect; 21, genitalia, ventral aspect; 22, mid tibia, and proximal segments of tarsus, axial aspect; 23, antenna, dorsal aspect; 24, maxillary palp, ventral aspect; 25, labial palp, ventral aspect; 26, wing remnant, ventral aspect. Fig. 16—20, 22, 23, 26, $\times 160$; 21, 24, 25, $\times 250$

The following description was already made from specimens of the sample from Allahabad, when the samples from Calcutta and Pusa were received. The additional samples and variation within the Allahabad sample are discussed under Remarks.

Male. — Head (Fig. 1) longer than wide (variation, see table 2), with several long lateral and dorsal setae. Compound eyes rather large. Epistomal margin bisinuate, the distance from the lobes to the antennal toruli one-third of the length of the cheek, and twice as long as the shortest distance between the toruli. Antenna (Fig. 23) eleven-segmented; the scape more than twice as long as the pedicel; the first flagellar segment anuliform, the second to fifth characteristically cup-shaped: the second largest, with an axial sensillum, the fourth almost as large, with an antiaxial sensillum; the club consisting of three segments, the first of which is about as long as the combined length of the other two, which bear oblong sensilla and sensillar rods. Labial palp (Fig. 25) two-segmented (2 : 1); the maxillary palp (Fig. 24) four-segmented (6 : 6 : 2 : 5); the mandible (Fig. 18) long and falcate, with one apical tooth, and with several setae and blunt denticles along the axial margin; two glands.

Thorax (Fig. 1); variation, see table 2. Pronotum wider than long (5 : 4), with long lateral setae close to the posterior angles; mesonotum, metanotum and propodeum fused, narrower than the pronotum, much wider than long (9 : 5), with setae close to the propodeal stigmata. Wing remnant (Fig. 26) consisting of a hyaline basal part, and a distal filament of variable length (table 2), with transverse folds and wrinkles as if articulated. Fore leg (Fig. 19—20): the coxa large and plate-like, its antiaxial surface with long setae, glabrous axially, as long as the combined length of the trochanter and femur; the femur with sparse setae; the tibia characteristically expanded distad, with scattered setae, the apical armature consisting of: two unequal ventral spurs accompanied by several stout spines, a row of spines along the antiaxial margin, and one more robust and longer spine in the dorsal angle; the tarsus compact, although the five segments (2 : 1 : 1 : 1 : 6) are quite distinct. Mid leg robust, with a few scattered setae; the coxa subglobular, as long as the femur; the tibia (Fig. 22) with spines along the distal half of the dorsal margin, a long spur and several stout spines in the ventral angle and along the apical margin, and two stout spines on the antiaxial disc; five tarsal segments (5 : 3 : 3 : 3 : 16). Hind leg rather slender, with sparse pubescence; the coxa as long as the trochanter and femur combined; the tibia (Fig. 16—17) with dorsal spines as in the mid leg, two ventral spurs and accompanying ventral spines, and with a set of more slender spines along the axial, apical margin; five tarsal segments (7 : 4 : 4 : 3 : 13).

Gaster (Fig. 1) about as long as the thorax; the genitalia with claspers and parameres (Fig. 21).

Length (head and thorax), ca. 1.2 mm (see table 2 for variation). Colour uniform yellow-brown.

Female. — Head (Fig. 27) not quite as long as wide across the compound eyes (5 : 6), with fine reticulate sculpture and scattered small setae. A wide but

shallow groove runs from the median ocellus to the antennal toruli; it has a narrow, low, median ridge. Longitudinal diameter of the eye longer than the cheek (10 : 9). Epistomal ridge (Fig. 33) with a rather long median process. Antennal toruli rather close: their distance to the inner margin of the eye thrice as long as the distance between the toruli. Antenna (Fig. 36) short; the scape approximately thrice as long as the pedicel; the third and fourth segments anuliform; the fifth to ninth subequal, transverse, with two to four large, oblong sensilla visible in antiaxial aspect, and scattered long setae; in axial aspect the row of sensilla is more regular, consisting of four or five sensilla per segment; the tenth to twelfth segments form a club, the tenth is distinctly widest, the others narrower though subequal in length. Labial palp (Fig. 32) two-segmented (5 : 2); the maxillary palp (Fig. 31) four-segmented (12 : 19 : 7 : 20) (but see under Remarks); the mandible bidentate, the second tooth blunt, almost truncate.

Thorax with reticulate sculpture and scattered small setae. Pronotum transverse, short; the scutum twice as long, the parapsidal furrows obsolete for the hinder two-thirds; the scutellum (Fig. 37) has its posterior margin rounded, but is otherwise rather regularly pentagonal; the metanotum short, for a great part

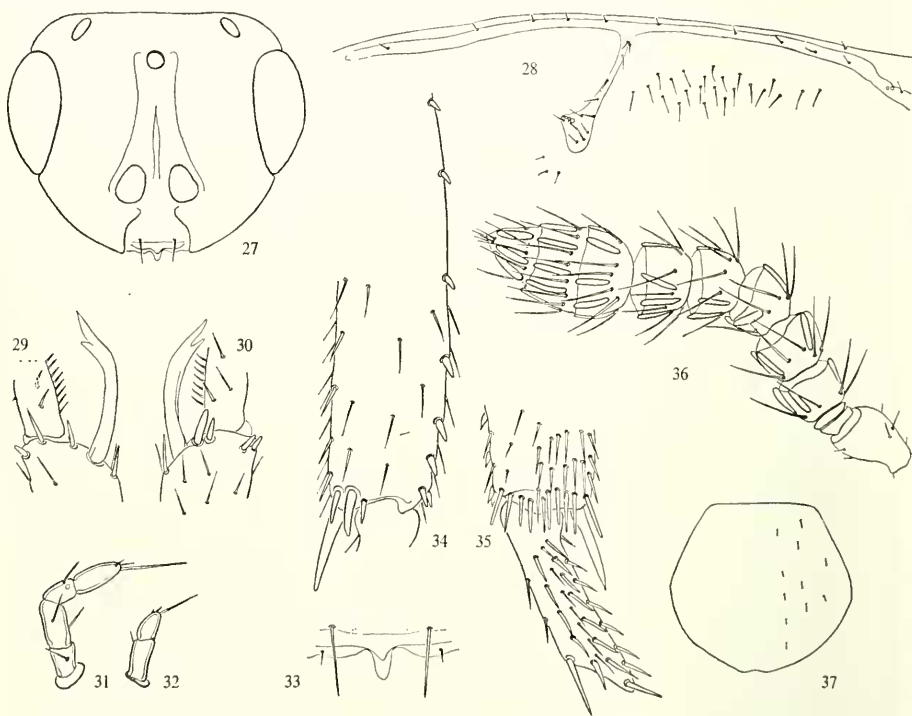


Fig. 27—37. *Sycosapter stabilis* (Walker), female from Allahabad (RMNH 783). 27, head, frontal aspect (pubescence omitted); 28, detail of fore wing (microtrichae omitted); 29, apex of fore tibia, axial aspect; 30, do., antiaxial aspect; 31, maxillary palp, ventral aspect; 32, labial palp, ventral aspect; 33, epistomal ridge; 34, apex of hind tibia, and metatarsus, axial aspect; 35, part of hind tibia, antiaxial aspect; 36, antenna from pedicel onwards, antiaxial aspect; 37, scutellum, dorsal aspect. Fig. 27, 28, 37, $\times 100$; 29—35, $\times 250$; 36, $\times 160$

concealed by the scutellum; the propodeum not very long, with longitudinal ridges mediad and laterad of the spiracular peritremata; the peritremata circular in outline; some ten long setae occur next to the peritremata. Fore wing (7 : 3), 1.4 mm long; the submarginal, marginal, stigmal, and postmarginal veins (Fig. 28) approximately in ratio 12 : 12 : 7 : 14, the submarginal vein with two pustules, the stigma with four; almost hyaline, with a variable number of long setae (table 3) below the marginal vein; the fringe not very long. Hind wing (3 : 1), 0.9 mm long; with three hamuli; the fringe longer than that of the fore wing. Fore leg: the coxa more than twice as long as the trochanter, distinctly shorter than the femur (7 : 10), with some long setae on the axial surface; the femur with scattered setae; the tibia not quite as long as the femur (9 : 10), the pubescence somewhat denser than on the femur, the apical armature (Fig. 29—30) consisting of: two conical spines in the dorsal angle, two longer blunt spines at the antiaxial, apical margin close to the long ventral spur, two acute subapical spines at the ventral angle, and two acute spines at the axial, apical margin; five tarsal segments (10 : 6 : 4 : 4 : 9). Mid leg slender, moderately pubescent; the tibia about as long as the femur and trochanter combined, with a ventral spur of normal length accompanied by a shorter spine at the antiaxial surface, the dorsal angle with a short spine; five tarsal segments (14 : 8 : 6 : 5 : 6). Hind leg with faint reticulate sculpture on the coxa; the coxa nearly as long as the femur, distinctly shorter than the tibia (5 : 7), with five to seven long setae at the axial surface; the trochanter one-third of the length of the coxa; the femur subglabrous axially but for some rather long setae on the disc, moderately pubescent antiaxially; the ventral and dorsal margins of the tibia with long setae, a row of spine-like setae along the distal third of the ventral margin, and a row of seven conical spines along the dorsal (Fig. 35) (or eight, if the most distal pair is counted for two; see table 3 for variation); the apical armature consists of the following spines visible in antiaxial aspect (Fig. 35): the spurs, two ventral spines and two dorsals; in axial aspect the spines are situated as in Fig. 34; five tarsal segments (22 : 10 : 7 : 5 : 13), the apical spine of the metatarsus not reaching halfway along the second tarsal segment.

Gaster. The apparent gaster ends with the eighth segment, the ninth being tubularly lengthened to about four times the combined length of the third to eighth segments. The distal margins of the tergites are not distinctly crenulate (see under Remarks). Pygostyles wanting.

Length (head, thorax, and apparent gaster), 1.7 mm. Colour of head and thorax metallic, with a greenish hue; the gaster brown, the antennae and the legs yellowish brown but for the slightly darker scape and coxa.

Remarks. — The males are somewhat variable in the number of claws on the genital claspers (three or four), in the spines of the tarsi (e.g. some of the ventral setae of the hind metatarsus may be more spine-like than is apparent from Fig. 17), and in the large dorso-apical spine of the fore tibia which is not very prominent in some specimens, but very long in others. Moreover, there is some variability in the relative proportions of head and thorax. In the smallest males, head and thorax are distinctly longer than wide, in the larger males the length-

Table 2. Some measurements (in mm) of males of *Sycosapter stabilis* (Walker)

	length of head	width of head	length of thorax	width of thorax	length of wing remnant
Allahabad (RMNH 738), (Fig. 1)	0.60	0.55	0.70	0.55	0.37
Calcutta (RMNH 1111),					
♂ 1	0.56	0.57	0.68	0.54	0.60
♂ 2	0.51	0.60	0.68	0.57	0.42
♂ 3	0.60	0.60	0.67	0.51	0.50
♂ 4	0.60	0.57	0.67	0.55	0.38
♂ 5	0.52	0.52	0.64	0.48	0.51
♂ 6	0.50	0.48	0.60	0.47	0.49
♂ 7	0.51	0.42	0.60	0.45	0.26
♂ 8	0.51	0.45	0.58	0.45	0.50
♂ 9	0.48	0.42	0.55	0.42	0.52
♂ 10	0.43	0.38	0.54	0.39	0.44
<i>Sycosapter insignis</i> , (OUM, lectotype)	0.50	0.48	0.63	0.44	not measured

width ratio diminishes, and the largest males have the head wider than long (see table 2). The wing remnant, present in all specimens studied, is variable in size.

The female described above, is not in all characters identical with *Indothymus crenulatus* Joseph, 1953, considered by JOSEPH (1957 : 107) to be synonymous

Table 3. Variation in some females of *Sycosapter stabilis* (Walker)

	maxillary palp, number of segments	fore wing, number of large setae	hind tibia, number of marginal spines
<i>Indothymus crenulatus</i> Joseph, 1953: 77—81, Trivandrum	3	c. 12	c. 8
Allahabad (RMNH 738),			
♀ 1 (Fig. 31, 35)	4	23	7
♀ 2	4	20	7
♀ 3	3	11	9
♀ 4	4	c. 20	8
♀ 5	4	c. 15	7
Pusa (HSPA),			
♀ 1	4	c. 20	8
♀ 2	4	c. 20	8
♀ 3	4	c. 20	7
♀ 4	3	11	10
♀ 5	4	18	7
<i>Idarnes stabilis</i> , (OUM, lectotype)	3	c. 11	c. 7
Calcutta (RMNH 1111),			
♀ 1	3	7	10
♀ 2	4	14	9
♀ 3	3	10	10
♀ 4	3	9	9
♀ 5	4	14	8

with *Sycoscapter insignis*. The most important differences are: (1) the maxillary palp four-segmented, vs. three-segmented in *I. crenulatus*; (2) the fore wing with about twenty long setae below the marginal vein, vs. a dozen in *I. crenulatus*; (3) the distal margin of the tergites less distinctly crenulate than in *I. crenulatus*. Similar differences are found between females of the various samples recorded in the present paper, and also between specimens of one and the same sample. Some variation is apparent in the number of spines along the dorsal margin of the hind tibia. Three-segmented maxillary palpi seem to be correlated with a low number of wing setae, and with a relatively high number of marginal spines on the hind tibia (see table 3). Variation in the total length is slight.

The species of *Sycoscapter* Saunders in Westwood, 1883, were catalogued by WIEBES (1964: 83—84), and their host preferences discussed, but this list appears to be incomplete in several respects; on the other hand several species should be excluded (e.g. *S. gracilipes* Westwood and *S. monilifer* Westwood; see under *Sycoscapteridea*, below). A revision of the catalogue, however, must be postponed until the African species have been studied.

Sycoryctes spec.

Material. — 2 ♀ and fragments, Calcutta, India, Victoria Park, ex *Ficus benghalensis* L., leg. D. S. Hill, 23.VIII.1963 (RMNH 1113).

The sample from Calcutta collected by Dr. HILL appears to contain a species of *Sycoryctes* Mayr, 1885, which I prefer not to describe after the few and partly defect specimens available.

Philotrypesis transiens (Walker) and *P. affinis* (Westwood) (tables 4—5)

In 1871 WALKER described *Idarnes transiens* (♀) from figs of *Ficus Indica* (= *F. benghalensis* L.) collected in India, and recorded the species from Ceylon. WESTWOOD (1883a) gave a short description of the species (♀ and alate ♂), and created a new genus *Idarnella* for its reception. PATTON (1884) synonymized *Idarnes transiens* and *Polanisa lutea* Walker, 1875, and listed the species as *Polanisa transiens* (Walker). ASHMEAD (1904), by synonymizing *Idarnella* Westwood and *Philotrypesis* Förster, 1878, and at the same time listing *Idarnes transiens* as the type of *Polanisa* (!), implicitly accepted the synonymy of *Polanisa* Walker and *Philotrypesis* Förster. ASHMEAD and subsequent authors consistently used the younger name *Philotrypesis*, and it was recently suggested to let the name *Polanisa* Walker, remain a nomen dubium for the time being (CHINA, 1962: 162). GRANDI (1930) described a female and a subapterous male from Pusa (Bihar, India), which he considered to represent *Philotrypesis transiens* (Walker).

Sycoscaptella affinis Westwood, 1883, was described from one apterous male from *Ficus Indica*, collected in Calcutta. ASHMEAD (1904) and SCHMIEDEKNECHT (1909) made mention of the female: it evidently is close to *Philotrypesis*. According to GRANDI (1921, 1930), *Sycoscaptella affinis* is distinct from *Philotry-*

Table 4. Some measurements (in mm) of males of *Philotrypesis affinis* (Westwood) and *P. transiens* (Walker)

	length of head	width of head	head, l/w ratio	length of thorax	length, pronotum	width, pronotum
<i>P. affinis</i> , (BM, holotype)	0.45	0.47	0.96	0.65	0.37	0.50
Calcutta (RMNH 1112),						
♂ 1	0.53	0.51	1.04	0.57	0.35	0.50
♂ 2 (Fig. 42)	0.52	0.52	1.00	0.67	0.37	0.53
♂ 3	0.50	0.50	1.00	0.55	0.32	0.51
♂ 4	0.40	0.42	0.95	0.60	0.30	0.42
♂ 5	0.45	0.50	0.90	0.52	0.35	0.52
Pusa (HSPA)	0.42	0.45	0.93	0.57	0.35	0.45
<i>P. transiens</i> , Calcutta (BM)	0.55	0.53	1.04	0.77	0.45	0.55
Pusa (HSPA),						
♂ 1	0.42	0.40	1.05	0.60	0.32	0.42
♂ 2	0.50	0.48	1.04	0.67	0.40	0.47
♂ 3	0.62	0.62	1.00	0.80	0.47	0.62
♂ 4	0.65	0.65	1.00	0.80	0.32	0.60
♂ 5	0.60	0.62	0.97	0.72	0.42	0.50
Calcutta (RMNH 1112),						
♂ 1	0.60	0.57	1.05	0.80	0.45	0.57
♂ 2	0.57	0.55	1.04	0.75	0.45	0.55
♂ 3	0.57	0.57	1.00	0.77	0.42	0.57

pesis, but a study of the type specimen convinced me that it does belong in this genus. *Philotrypesis travancoricus* Joseph, 1954, is a younger synonym.

The samples recorded in the present paper contain the following forms.

Heteromorphous males. — In both samples containing males (one from Pusa¹), and one from Calcutta), as well as in the BM sample of WESTWOOD's material, two forms of subapterous males can be distinguished, referable either to *Philotrypesis transiens* (Walker), or to *P. affinis* (Westwood). Next to some differences already mentioned by JOSEPH (1954: 90, i, ii, and iii), the males may be distinguished by the spines of the legs, as follows. The fore tibia bears long ventro-apical spines in *P. transiens* (Fig. 38), while these spines are stout and cone-like in *P. affinis* (Fig. 44). The mid and hind tibiae bear long ventral spines in *P. transiens* (Fig. 39 and 40, respectively), while in *P. affinis* (Fig. 45 and 43) there are more, smaller spines, also on the anti-axial discs. There seems to be some difference in the presence of long setae on all tibiae in *P. affinis*, but the state of preservation of the available specimens belonging to the other form does not permit of a positive statement on the absence of setae in *P. transiens*. The hind metatarsus of *P. affinis* is more compressed, and bears a smaller number of ventral spines, than in *P. transiens*.

The two forms differ in size (table 4). The smaller males, with in most instances the head slightly transverse or as long as wide, belong to *P. affinis*; the larger males (head in most examples oblong), to *P. transiens*.

¹) Possibly from the same sample as that described by Grandi (1930).

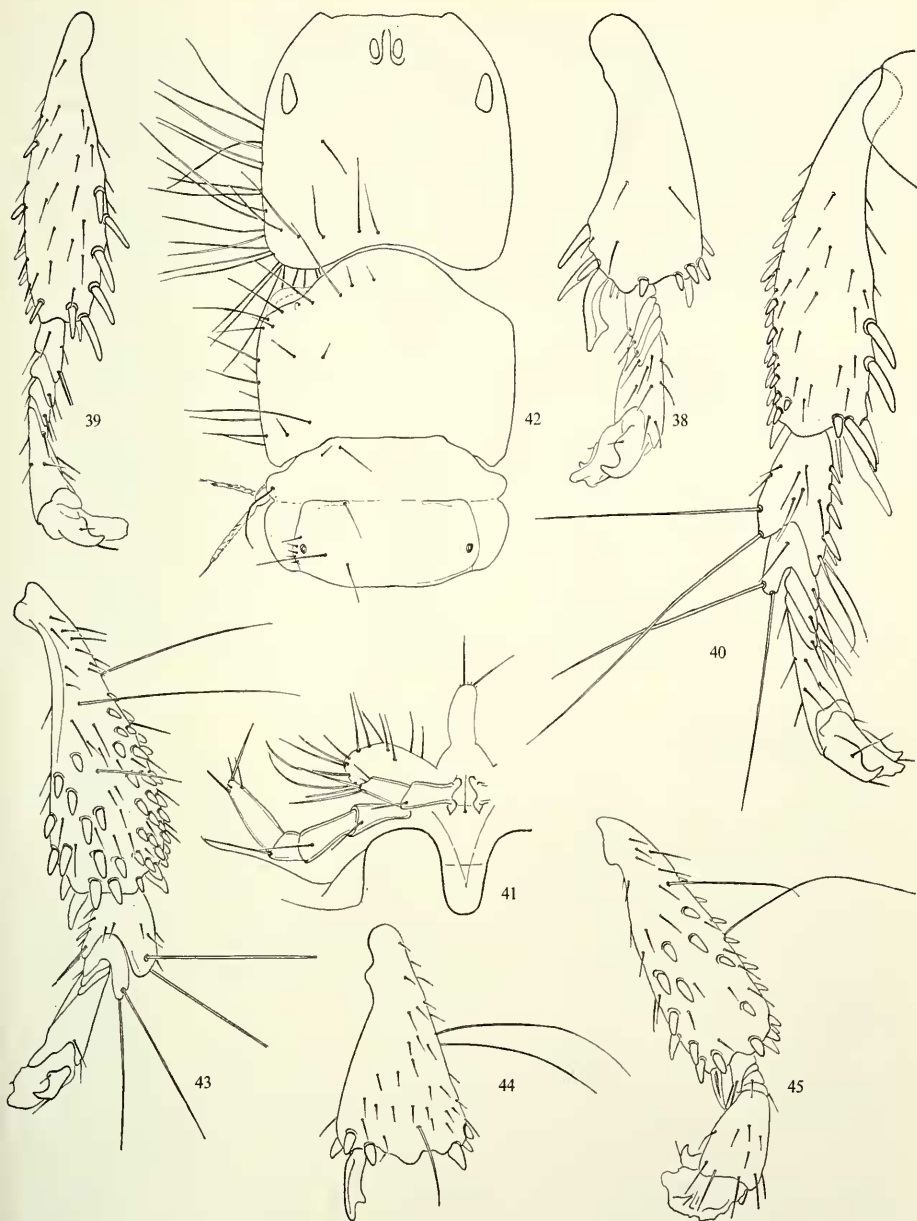


Fig. 38—41. *Philotrypesis transiens* (Walker), male from Pusa (HSPA). 38, fore tibia and tarsus, antiaxial aspect; 39, mid tibia and tarsus, antiaxial aspect; 40, hind tibia and tarsus, antiaxial aspect; 41, mouthparts, ventral aspect. Fig. 42—45. *Philotrypesis affinis* (Westwood), male from Calcutta (RMNH 1112). 42, head and thorax, dorsal aspect (pubescence in right half omitted); 43, hind tibia and tarsus, antiaxial aspect; 44, fore tibia, antiaxial aspect; 45, mid tibia and tarsus, antiaxial aspect. Fig. 38—40, 43—45, $\times 160$; 41, $\times 250$; 42, $\times 60$

Females. — Both samples mentioned above, and another one from Allahabad, contain series of females. Except for two aberrant specimens (see under *Philotrypesis* spec.), the females fall into two groups, the one presumably representing *Philotrypesis affinis* (Westwood) (from the Calcutta sample), the other (sample from Pusa) identical with *P. transiens* (Walker). In *P. transiens* (cf. GRANDI, 1930 : 169), the eighth urotergite is longer than the apparent gaster, or equal in length; in all specimens but one, of *P. affinis* it is distinctly shorter (table 5). The

Table 5. Length measurements (in mm) of some parts of the gaster in females of *Philotrypesis* from *Ficus benghalensis* L.

	apparent gaster	urotergite VIII	urotergite IX	valves, from end of IX
<i>P. transiens</i> (Walker),				
Pusa (HSPA),				
♀ 1	0.65	0.70	0.32	2.6
♀ 2	0.65	0.78	0.35	2.6
♀ 3 ¹⁾	0.48	0.48	0.28	1.8
♀ 4	0.58	0.60	0.32	2.2
♀ 5	0.62	0.68	0.35	2.5
♀ 6	0.65	0.65	0.35	2.4
♀ 7	0.65	0.72	0.35	2.8
♀ 8	0.52	0.52	0.28	1.9
♀ 9	0.65	0.70	0.35	2.6
♀ 10	0.65	0.75	0.38	2.8
<i>P. affinis</i> (Westwood),				
Calcutta (RMNH 1112),				
♀ 1	0.75	0.50	0.28	2.0
♀ 2	0.72	0.48	0.28	2.0
♀ 3	0.82	0.50	0.28	2.1
♀ 4	0.72	0.52	0.28	2.1
♀ 5	0.75	0.50	0.30	2.2
♀ 6	0.75	0.50	0.28	2.1
Allahabad (RMNH 1121),				
♀ 1	0.60	0.40	0.22	1.8
♀ 2	0.58	0.58	0.30	2.2
<i>Philotrypesis</i> spec.,				
♀ 1	0.80	0.85	0.38	3.0
♀ 2	0.70	0.70	0.32	2.9

relative proportions of the eighth and ninth urotergites vary with size; in *P. transiens* the eighth urotergite is more nearly twice, or over twice as long as the ninth, while in all specimens of *P. affinis* this ratio is less than two. Structural differences are found in: (1) the shape of the thorax, viz. the dorsum faintly curved in *P. affinis* (Fig. 59), while *P. transiens* is distinctly hump-backed (Fig. 47); (2) in contrast to *P. affinis* (Fig. 56), most antennal setae of *P. transiens* (Fig. 46) are inserted in the basal portion of the segments; (3) the second tooth of the mandible of *P. affinis* (Fig. 60) is more distinctly truncate than that of

¹⁾ Antenna with two anelli, maxillary palp three-segmented.

P. transiens (Fig. 50); (4) the maxillary palp of *P. transiens* (Fig. 49) is more slender than that of *P. affinis* (Fig. 58).

A very small specimen of *P. transiens* (♀ 3, table 5) resembles *P. affinis* in the relative proportions of the gastral tergites, but it has the structural characteristics of *P. transiens*. It shows some reduction in the number of antennal anelli and palpal segments.

Two females of the *P. affinis* sample from Calcutta are aberrant in several details, particularly in the length of the antennal segments (Fig. 53). These specimens have a long gaster, and a relatively long eighth urotergite (table 5); the mouthparts are shaped as in *P. transiens*.

Variation is rife in *Philotrypesis*, and with the specimens at hand I cannot arrive at a satisfactory conclusion as to the classification of the various forms. For the time being I prefer to treat *Philotrypesis transiens* (Walker) and *P. affinis* (Westwood) as species, while referring the two aberrant females from the Calcutta sample to *Philotrypesis* spec. The material is listed below under the respective specific headings. I have designated one female lectotype of both *Idarnes transiens* Walker and *Polanisa lutea* Walker, thus making *Philotrypesis* Förster, 1878, a subjective junior synonym of *Polanisa* Walker, 1875. An application was made to the International Commission on Zoological Nomenclature, asking for the suppression of *Polanisa* Walker, and proposing the validation of *Philotrypesis* Förster.

Philotrypesis transiens (Walker)

(Fig. 38—41, 46—52)

Idarnes transiens Walker, 1871, Notes on Chalcidiae 4: 62 (descr. ♀, Hindostan, ex *Ficus Indica*, leg. W. Elliott; Ceylon, leg. Thwaites).

Polanisa lutea Walker, 1875, Entomologist 8: 18 (descr. [♀], India). For a discussion of the status of *Polanisa* Walker, 1875, see China, 1962, Bull. zool. Nomencl. 19: 162 and the references cited there.

Idarnella transiens Westwood, 1883, Trans. ent. Soc. Lond. 1883: 37, pl. 6 fig. 36—42 (descr. ♀, alate ♂, Hindostan and Ceylon).

Polanisa transiens Patton, 1884, Proc. ent. Soc. Lond. 1884: xvi (syn.: *Polanisa lutea* Walker).

Philotrypesis transiens Grandi, 1921, Boll. Lab. Zool. Portici 15: 95—102, 184 (discussion; catalogue); Grandi, 1930, Boll. Lab. Ent. Bologna 3: 51—61, 168—171, 175, fig. LXXV—LXXVI (discussion; descr. ♂, ♀, Pusa, Bihar, India, ex "*Ficus benghalensis* (= *indica* L.)", leg. G. R. Dutt; catalogue); Wiebes, 1966, Tijdschr. Ent. 109: 165 (probable syn.: *Sycoscaptella affinis* Westwood, *Philotrypesis travancoricus* Joseph [see under *Philotrypesis affinis*]).

Material. — 1 ♀, Murutt. Sir W. ELLIOTT. 81—107; now designated lectotype of *Idarnes transiens* Walker and *Polanisa lutea* Walker (BM).

2 ♂, Calcutta, India, ex *Ficus Indica*, leg. WOOD-MASON, 1880, viz. one in BM, slide-mounted, sub *Sycoscaptella affinis*, and one dried specimen ("Calcutta" on label only) in OUM, indicated as syntype of *Sycosapter insignis* Saunders in Westwood.

4 ♂, Calcutta, India, Victoria Park, ex *Ficus benghalensis* L., leg. D. S. HILL, 23.VIII.1963 (RMNH 1119, slide 1119a; part of a series in coll. HILL).

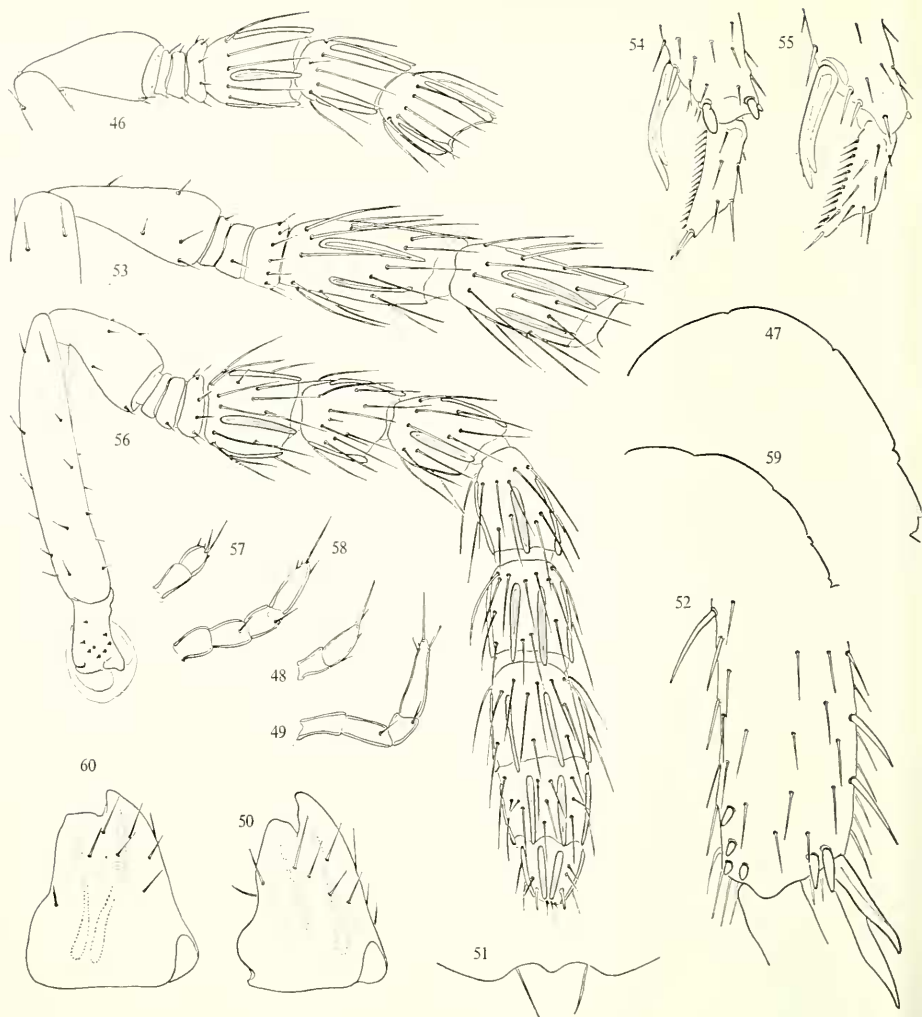


Fig. 46—52. *Philotrypesis transiens* (Walker), female from Pusa (HSPA). 46, antennal scape and proximal segments of funicle, axial aspect; 47, dorsum of thorax, outline in lateral view of left side; 48, labial palp, ventral aspect; 49, maxillary palp, ventral aspect; 50, mandible, dorsal aspect; 51, epistomal ridge; 52, apex of hind tibia, antiaxial aspect. Fig. 53. *Philotrypesis* spec., female from Calcutta (RMNH 1122), antennal scape and proximal segments of funicle, antiaxial aspect. Fig. 54—60. *Philotrypesis affinis* (Westwood), female from Calcutta (RMNH 1112). 54, apex of fore tibia, and metatarsus, antiaxial aspect; 55, do., axial aspect; 56, antenna, axial aspect; 57, labial palp, ventral aspect; 58, maxillary palp, ventral aspect; 59, dorsum of thorax, outline in lateral view of left side; 60, mandible, dorsal aspect. Fig. 46, 48—50, 52—58, 60, $\times 250$; 47, 59, $\times 60$; 51, $\times 160$.

Series ♂, ♀, Pusa, Bihar, India, ex *Ficus bengalensis*, leg. S. R. DUTT, II.1922 (HSPA; ♂ and ♀ in RMNH 1116 and 1120, respectively).

Female. — The epistomal margin is not straight as figured by GRANDI (1930 Fig. LXXV, 1), but it has a median protrusion, as in Fig. 51.

Philotrypesis affinis (Westwood) comb. nov.

(Fig. 42—45, 54—60)

Sycoscaptella affinis Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 36, pl. 6 fig. 30—35 (descr. ♂, Calcutta, India, ex *Ficus Indica*, leg. J. Wood-Mason); Ashmead, 1904, Mem. Carnegie Mus. 1: 237, 240, 390 (descr. ♂, ♀ [!], in key); Schmiedeknecht, 1909, Gen. Ins. 97: 87, 89, 90—91 (do.); Grandi, 1921, Boll. Lab. Zool. Portici 15: 94—95 (not *Philotrypesis*); Grandi, 1930, Boll. Lab. Ent. Bologna 3: 54—55 (not *Philotrypesis*).

Philotrypesis travancoricus Joseph, 1954, Agra Univ. J. Res. 3: 83—90, fig. XIII—XIV (descr. ♂, Trivandrum, India, Bot. Gdns., ex *Ficus benghalensis* L., leg. K. J. Joseph, 15.VI.1950). Syn. nov.

Material. — 1 ♂, Calcutta, India; evidently the holotype of *Sycoscaptella affinis* Westwood (BM, slide).

16 ♂, 6 ♀, Calcutta, India, Victoria Park, ex *Ficus benghalensis* L., leg. D. S. HILL, 23.VIII.1963 (RMNH 1112, slides 1112 a, c, d; part of a series in coll. HILL).

2 ♀, Allahabad, India, ex *Ficus benghalensis* L., leg. M. H. ANSARI (RMNH 1121, one specimen slide-mounted).

1 ♂, Pusa, Bihar, India, ex *Ficus benghalensis*, leg. S. R. DUTT, II.1922 (HSPA).

Remark. — The inclusion of *Sycoscaptella affinis* in *Philotrypesis*, makes *Sycoscaptella* Westwood, 1883, a subjective junior synonym of *Philotrypesis* Förster, 1878.

Philotrypesis spec. (Fig. 53)

Material. — 2 ♀, Calcutta, India, Victoria Park, ex *Ficus benghalensis* L., leg. D. S. HILL, 23.VIII.1963 (RMNH 1122, one slide-mounted; from a series in coll. HILL).

SYCOPHAGINAE FROM *Ficus religiosa* L.

All Sycophagine fig wasps from *Ficus religiosa* L. were described and figured by WESTWOOD (1883a). For some ASHMEAD (1904) erected new genera.

WESTWOOD's types are preserved in the Hope Department of Entomology (OUM), together with other specimens on two slides. For easy recognition of the type specimens I give two sketches of the position of the wasps in the slides (Fig. 61—62), indicating the identification of the specimens.

A survey of WESTWOOD's names, and the names used in the present paper, is presented in table 1. WESTWOOD (1883a: 42—43) mentioned a number of additional species parasitic on the same plant. Most of these could be recognized from his short notes in comparison with the specimens in the slides, as follows:

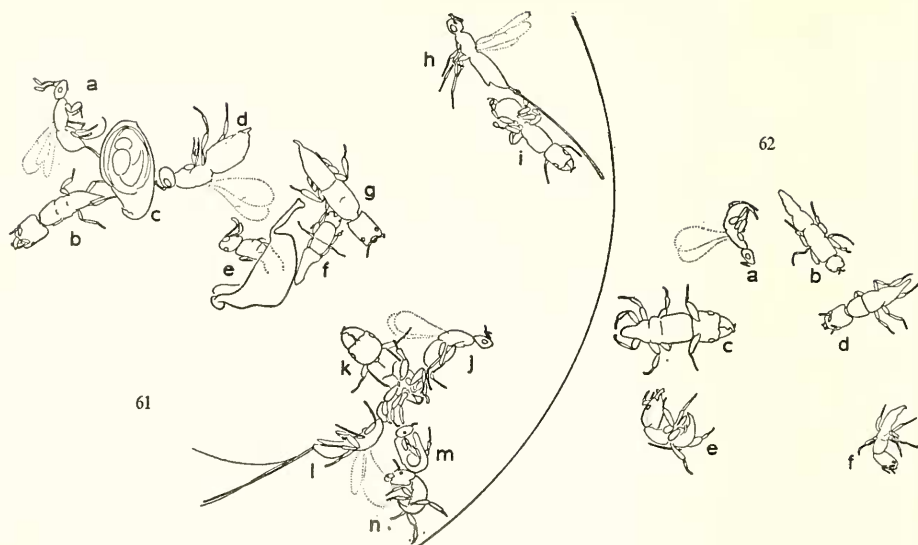


Fig. 61—62. Fig insects from *Ficus religiosa* L.; Stainforth Green collection from Ceylon (OUM). 61, position of specimens in slide Q: a, *Blastophaga quadraticeps* Mayr, ♀; b, *Sycoscapteridea monilifera* (Westwood), ♂ (lectotype); c, gall with *Blastophaga quadraticeps* Mayr, ♀; d, *Otitesella digitata* Westwood, ♀; e, *Blastophaga quadraticeps* Mayr, ♀ emerging from gall; f, *Blastophaga quadraticeps* Mayr, ♂; g, *Philotrypesis anguliceps* (Westwood), ♂ (lectotype); h, *Sycoryctes religiosae* spec. nov., ♀; i, *Otitesella digitata* Westwood, ♂ (lectotype); j, *Philotrypesis anguliceps* (Westwood), alate ♂; k, *Otitesella digitata* Westwood, ♂ ("religiosa"); l, *Sycoscapteridea monilifera* (Westwood), ♀; m, *Blastophaga quadraticeps* Mayr, ♂; n, *Sycoscapteridea monilifera* (Westwood), ♂ ("gracilipes"). 62, position of specimens in slide P: a, *Philotrypesis anguliceps* (Westwood), alate ♂; b, *Blastophaga quadraticeps* Mayr, ♂; c, *Otitesella digitata* Westwood, ♂ (lectotype of *O. religiosa* Westwood); d, *Sycoscapteridea monilifera* (Westwood), ♂ (lectotype of *Sycoscapter gracilipes* Westwood); e, *Sycoscapteridea monilifera* (Westwood), ♂; f, *Sycoscapteridea monilifera* (Westwood), ♂ ("gracilipes").

1, *Blastophaga quadraticeps* Mayr, 1885, ♀, ♂; 2, probably *Philotrypesis anguliceps* (Westwood, 1883), ♀, not present in the slides; 3 ("pitchy coloured on the back"), *Sycoryctes religiosae* spec. nov., ♀; 4 ("abdomen banded with dark brown"), *Sycoscapteridea monilifera* (Westwood, 1883), ♀; 5, not present; 6, *Otitesella digitata* Westwood, 1883, ♀; 7, *Philotrypesis anguliceps* (Westwood, 1883), alate ♂.

From the labels on WESTWOOD's slides it is clear that the specimens from the STAINFORTH GREEN collection, now selected lectotypes, were collected at Peradeniya, Ceylon.

Otitesella digitata Westwood

(Fig. 63—68)

Otitesella digitata Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 40, pl. 7 fig. 43—51 (descr. ♂, Ceylon, ex *Ficus religiosa* L., leg. G. H. K. Thwaites & J. Stainforth Green); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 14—15, 18—21, fig. I—II (descr. ♂, Ceylon, ex *Ficus religiosa*, leg. G. H. K. Thwaites).

Oritesella religiosa Westwood, 1883, Trans. ent. Soc. Lond. 1883: 40—41, pl. 7 fig. 52—57 (descr. ♂, Ceylon, ex *Ficus religiosa* L., leg. G. H. K. Thwaites & J. Stainforth Green); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 15 (discussion). Syn. nov.

Material. — 4 ♂, 1 ♀, Peradeniya, ex *Ficus religiosa* L., STAINFORTH GREEN coll. from Ceylon (OUM); viz. slide Q: 1 ♀ (Fig. 61, d), 1 ♂ (Fig. 61, i, now designated lectotype of *O. digitata* Westwood), 1 ♂ (Fig. 61, k); slide P: 1 ♂ (Fig. 62, c, now designated lectotype of *O. religiosa* Westwood), and 1 ♂ under the edge of the cover glass, not depicted in Fig. 62.

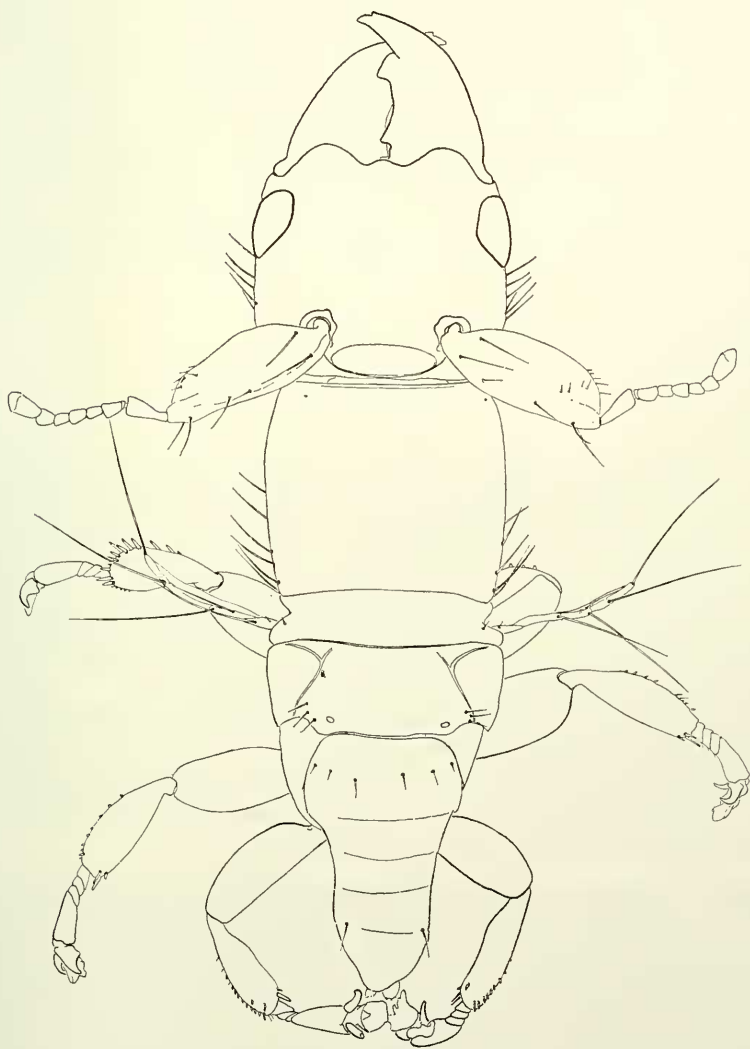


Fig. 63. *Oritesella digitata* Westwood, ♂ (lectotype of *O. religiosa* Westwood), dorsal aspect;
× 60

4 ♀, *F. relig.[iosa]* ROTHN.[EY], ex coll. S. SAUNDERS 84-31 (BM); 1 slide-mounted.

1 ♂, series ♀, Pusa, Bihar, India, ex *Ficus religiosa*, leg. S. R. DUTT, V.1922 (HSPA; 10 ♀ in RMNH 1123).

Male ("*religiosa*"). — Dorsal aspect of lectotype, Fig. 63. Head slightly wider than long. Antenna (Fig. 65) with one anellus; the fourth, sixth, and eighth segments with a triangular, antiaxial sensillum.

Thorax. Pronotum wider than long (5 : 4), with long lateral setae; the mesonotum short, constricted medially; the metanotum incompletely fused with the propodeum, their combined length nearly twice the length of the mesonotum. Wing remnant long, with several long setae. The legs are much like those of *O. digitata* as described by GRANDI (1922 : Fig. II, 4—9), but for the tarsi (apical segment not swollen) and the armature of the tibiae. Fore leg (Fig. 66): the tibia with many ventral spines, a robust bifid spur, and long spines over almost the whole length of the dorsal margin. Mid leg (Fig. 64) with one tibial spur accompanied by two antiaxial and two axial spines, and with a row of small spines along the dorsal margin. Hind leg similar to the mid leg, but with more ventral spines, and with several rows of spines along the distal half of the dorsal margin.

Length (head without mandibles, and thorax), 1.2 mm. Colour uniform yellowish brown.

Female. — Differs from *Micranisa pteromaloides* (Walker) in the following characters.

Head (Fig. 67) shorter than wide across the compound eyes (3 : 4). Epistomal margin with a median prominence. The distance between the antennal toruli is two-thirds of their distance to the inner margin of the eye. The antenna (Fig. 68) has twelve segments, two of which are anuliform; in axial aspect, the sensilla are less regularly distributed than in *M. pteromaloides*, and not all setae are basal. The length of the four segments of the maxillary palp is rather variable: in large specimens, the apical segment is approximately three times as long as the sub-apical, but it is scarcely twice as long in smaller examples.

Thorax. Pronotum short; parapsidal furrows obsolete for the posterior half; the scutellum subcircular in outline. Fringe of the fore wing very short. Hind leg: only the coxa brownish at the base, the femur concolorous with the tibia and tarsus.

Length, 1.2—1.8 mm. Colour brown, with a greenish metallic hue; antennae and legs yellowish, the hind coxae with a brownish base.

Remarks. — *Otitesella digitata* Westwood and *O. religiosa* Westwood are two forms of a polymorphic species. This can be surmised from their similarity in several structural details; it is, moreover, corroborated by the observation of comparable males of another species of *Otitesella* copulating with one and the same female (HILL, in litt.).

As already noted by GRANDI (1922 : 21), the male of *O. digitata* differs from *O. epicarioides* Grandi and *O. africana* Grandi in the number of anelli in the antenna, and in the presence of a bifid spur on the fore tibia. The female of

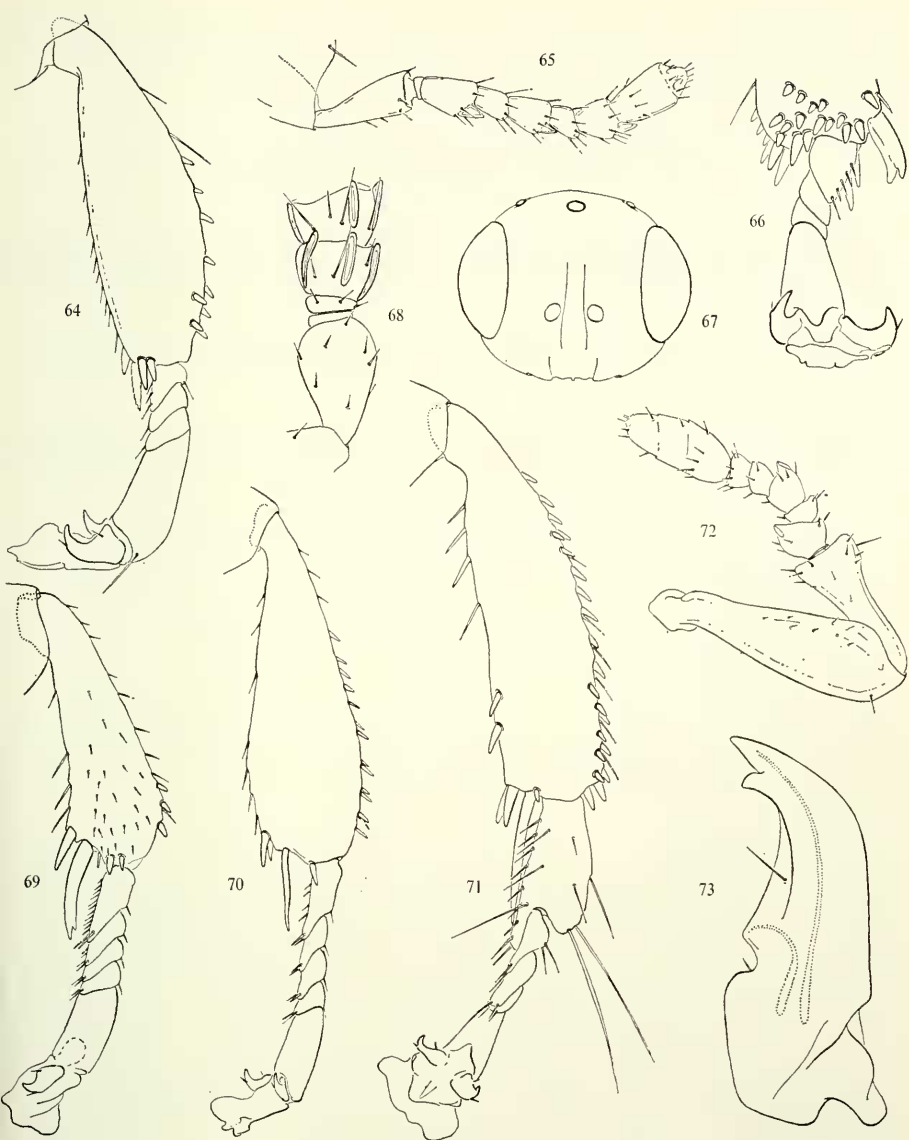


Fig. 64—68. *Otitesella digitata* Westwood (64—65, ♂ lectotype of *O. religiosa* Westwood; 66, ♂ slide Q, k; 67, ♀ slide BM; 68, ♀ from Pusa). 64, ♂ mid tibia and tarsus, antiaxial aspect; 65, ♂ antenna from pedicel onwards, dorsal aspect; 66, ♂: apex of fore tibia, and tarsus, ventral aspect; 67, ♀ head, frontal aspect (pubescence omitted); 68, ♀ antenna, detail in axial view. Fig. 69—73. *Sycosapteridea monilifera* (Westwood), male from Ceylon (BM). 69, fore tibia and tarsus, antiaxial aspect; 70, mid tibia and tarsus, axial aspect; 71, hind tibia and tarsus, antiaxial aspect; 72, antenna, dorsal aspect; 73, mandible, ventral aspect. Fig. 64—66, 69—73, $\times 160$; 67, $\times 60$; 68, $\times 250$

O. digitata has two anelli, versus three in several other species assigned to *Otitesella*; the pronotum is rather longer than in GRANDI's species, and the parapsidal furrows are incomplete. For the time being, I retain *O. africana* and *O. epicarioides*, as a species group, in *Otitesella* Westwood.

Sycoscapteridea monilifera (Westwood)

(Fig. 69—75, 77—84)

Sycoscapter monilifer Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 41, pl. 8 fig. 58—62 (descr. [♂], Ceylon, ex *Ficus religiosa* L., leg. G. H. K. Thwaites & J. Stainforth Green); Ashmead, 1904, Mem. Carnegie Mus. 1: 239, 390 (type species of new genus, *Sycoscapteridea* Ashmead).

Sycoscapter gracilipes Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 41—42, pl. 8 fig. 63—66 (descr. ♂, Ceylon, ex *Ficus religiosa* L., leg. G. H. K. Thwaites & J. Stainforth Green). Syn. nov.

Material. — 5 ♂, 1 ♀, Peradeniya, ex *Ficus religiosa* L., STAINFORTH GREEN coll. from Ceylon (OUM); viz. slide Q: 1 ♂ (Fig. 61, b, now designated lectotype of *Sycoscapter monilifer* Westwood), 1 ♀ (Fig. 61, l), 1 ♂ (Fig. 61, n); slide P: 1 ♂ (Fig. 62, d, now selected lectotype of *Sycoscapter gracilipes* Westwood), 1 ♂ (Fig. 62, e), 1 ♂ (Fig. 62, f).

1 ♂ dissected on slide, Ceylon, in seeds of *Ficus religiosa*, leg. THWAITES, pres. by J. O. WESTWOOD 82—112 (BM). This specimen was used for Fig. 69—73 of the present paper.

3 ♂, Calcutta, India, ex *Ficus religiosa*, leg. ROTHNEY, ex coll. S. SAUNDERS 84—31 (BM).

4 ♀, Pusa, Bihar, India, ex *Ficus religiosa*, leg. S. R. DUTT, V.1922 (HSPA; 1 ♀ slide-mounted, RMNH 1124).

Male ("monilifera"). — Dorsal aspect of lectotype, Fig. 75. Head slightly longer than wide (9 : 8), with rows of spine-like setae along the posterior half of the lateral margin, and several long dorsal setae in the posterior part. Epistomal margin almost straight. Eyes rather small. Toruli of the antennae close together, their distance from the epistomal margin about half their longitudinal diameter. Antenna (Fig. 72) consisting of eleven segments; one very short anellus; the club three-segmented; the scape little expanded, almost twice as long as the pedicel; the fourth and sixth segments cyathiform, each with a sensillum; the fifth, seventh and eighth smaller; the club large, its segments indistinctly separated. Labial palp two-segmented (2 : 1); maxillary palp four-segmented (3 : 3 : 1 : 2). Mandible (Fig. 73) with a truncate subapical tooth; two glands.

Thorax with several long setae. Pronotum about as long as wide, tapering anteriorly; the length of the combined mesonotum and metanotum one-quarter of the width; the propodeum longer, with small subcircular spiracular peritremata. No wing remnants. Fore leg (Fig. 69): the coxa wide, as long as the femur; the tibia slender, with a robust ventral spur, one ventral spine, two apical spines visible in antiaxial aspect, three small dorsal spines, and several long setae along the ventral and dorsal margins; five tarsal segments (6 : 3 : 2 : 2 : 10). Mid leg (Fig. 70): the tibia with small spines along the dorsal margin, one spine at the antiaxial apex,

one slender ventral spur, two spines in the ventral angle, and several setae along the ventral margin; five tarsal segments (10 : 5 : 5 : 3 : 14). Hind leg (Fig. 71) robust; the coxa nearly as long as the femur and trochanter combined; the tibia slightly longer than the femur, with rather stout spines and some setae along the dorsal margin, a small spine at the antiaxial apex and a row of slender spines along the axial apex, a long ventral spur, two spines in the ventral angle, two stout spines at two-thirds of the ventral margin, and several slender spines more proximally along the ventral margin; the metatarsus expanded, the second to fourth tarsi subequal, approximately one-third of the length of the metatarsus, the apical segment two-thirds of this length.

Gaster about as long as the thorax. Genital claspers with three claws.

Length (head without mandibles, and thorax), 1.1 mm.

Male ("*gracilipes*"). — Dorsal aspect of lectotype, Fig. 74. Differs from the male described above mainly in the setae of the head (laterals lacking), and in the



Fig. 74—75. *Sycosapteridea monilifera* (Westwood), males, dorsal aspect. 74, lectotype of *Sycosapter gracilipes* Westwood; 75, lectotype of *Sycosapter monilifer* Westwood. Fig. 76, *Philotrypesis anguliceps* (Westwood), male lectotype, dorsal aspect. Fig. 74—76, $\times 60$

smaller body (length of head and thorax, 0.9 mm). The palpi of the mouthparts, contrary to the description by WESTWOOD (1883a : 42), are present, and similar to those described above.

Female. — Head (Fig. 78) shorter than wide across the compound eyes (20 : 23); the longitudinal diameter of the eye longer than the cheek (11 : 8). Epistomal margin very faintly bilobed. Antennal toruli close to the epistomal margin. Antenna (Fig. 77) consisting of thirteen segments; three anelli; the club three-segmented; the scape two-and-a-half times as long as the pedicel; the sensilla of the funicular segments rather wide, in one regular whorl. Labial palp (Fig. 82) two-segmented (2 : 3); maxillary palp (Fig. 83) four-segmented (5 : 6 : 5 : 12). Mandible tridentate, with two glands.

Thorax. Pronotum long; the parapsidal grooves almost complete; the scutellum (Fig. 79) with fine reticulate sculpture, with two long posterior setae; the propodeum long, with about ten setae laterad of the spiracular peritremata. Fore wing (16 : 6), 1.3 mm long; the submarginal, marginal, stigmal, and postmarginal veins approximately in ratio 12 : 7 : 2 : 6; the stigma with four pustules; the membrane, but for the proximal third, with microtrichae; the fringe of moderate length. Fore leg: the femur as long as the coxa and trochanter combined, the tibia little shorter; the coxa with antiaxial setae; the tibia with two small spines in the dorsal angle, several long spines visible in axial aspect (Fig. 81), and a robust ventral spur; five tarsal segments (2 : 1 : 1 : 1 : 2). Mid leg slender; the tibia as long as the femur and trochanter combined, with one spur; five tarsi (9 : 5 : 4 : 3 : 4). Hind leg: the femur and tibia subequal in length, about as long as the coxa and trochanter combined; the tibial armature (Fig. 80) consisting of: two unequal ventral spurs, five antiaxial spines in the ventral angle, six conical spines in the distal portion of the dorsal margin, and a row of slender spines along the axial apex; five tarsal segments (14 : 8 : 4 : 3 : 4).

Gaster. The ninth urotergite more than thrice as long as the apparent gaster, with very small pygostyles (Fig. 84) near the apex.

Length (head, thorax and apparent gaster), 1.3 mm. Colour yellowish brown, the gaster dorsally banded with dark brown.

Remarks. — *Sycoscapteridea monilifera* (Westwood) appears to be congeneric with the species described in this genus by JOSEPH (1957). An important generic character is to be found in the male thorax, in which one of the terga (presumably representing the metanotum) is situated between the mesonotum and the propodeum without reaching the lateral margins. The female has small pygostyles near the apex of the long ninth urotergite, as earlier described for *S. stilifera* Wiebes: a primitive character in the Sycoryctini. This feature, the long pronotum, the absence of long setae in the stigmal-submarginal angle of the fore wing, and the rather short dorsal spines of the hind tarsi, would seem to be differential characters of the females of *Sycoscapteridea* Ashmead, 1904.

The females described by JOSEPH have only one anellus in the antenna, while both *S. monilifera* and *S. stilifera* have three. The female mandibles are described by JOSEPH as bidentate; *S. monilifera* and *S. stilifera* have three teeth.

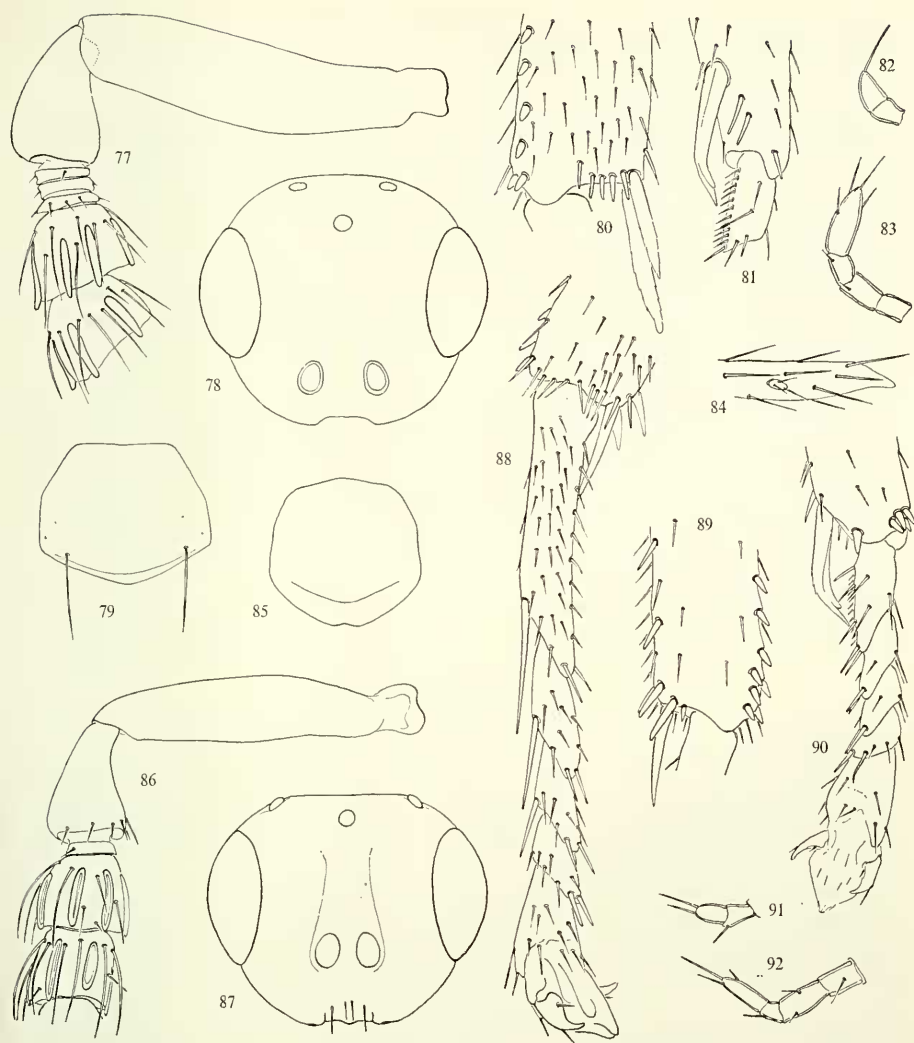


Fig. 77—84. *Sycoscapteridea monilifera* (Westwood), female from Pusa (HSPA). 77, proximal segments of antenna, axial aspect; 78, head, frontal aspect (pubescence omitted); 79, scutellum, dorsal aspect; 80, apex of hind tibia, antiaxial aspect; 81, apex of fore tibia, and metatarsus, axial aspect; 82, labial palp, ventral aspect; 83, maxillary palp, ventral aspect; 84, apex of ninth urotergite, lateral aspect. Fig. 85—92. *Sycoryctes religiosae* spec. nov., female holotype. 85, scutellum, dorsal aspect; 86, proximal segments of antenna, axial aspect; 87, head, frontal aspect (pubescence omitted); 88, apex of hind tibia, and tarsus, axial aspect; 89, apex of hind tibia, antiaxial aspect; 90, apex of fore tibia, and tarsus, antiaxial aspect; 91, labial palp, ventral aspect; 92, maxillary palp, ventral aspect. Fig. 77, 80—83, 86, 88—92, $\times 250$; 78, 79, 85, 87, $\times 100$; 84, $\times 160$

The host range of *Sycoscapteridea* is rather wide, species having been recorded from subgenus *Urostigma* (sections *Urostigma* and *Conosycea*) and subgenus *Ficus* (sections *Ficus* and *Sycidium*).

A preliminary catalogue of the genus runs as follows.

Sycoscapteridea Ashmead, 1904, Mem. Carnegie Mus. 1 : 239 (descr. ♂, type *Sycoscapter monilifer* Westwood); Joseph, 1953, Agra Univ. J. Res. 2 : 62 (*Neosycoecus*, descr. ♀, type *N. indicus* Joseph).

forsteni Joseph, 1957, Ann. Soc. ent. France 125 : 115—117, fig. X (descr. ♂, ♀, India, ex *Ficus palmata* Forsk.).

indica Joseph, 1953, Agra Univ. J. Res. 2 : 63—69, fig. 28—45 (*Neosycoecus*, descr. ♀, India, ex *Ficus infectoria* Roxb.; biol. notes); Joseph, 1957, Ann. Soc. ent. France 125 : 115, fig. IX 8—13 (*Sycoscapteridea*; descr. ♂, India, ex *Ficus infectoria* Roxb.) [*F. infectoria* Roxb. = *F. virens* Ait.].

longipalpus Joseph, 1953, Agra Univ. J. Res. 2 : 69—73, fig. 46—59 (*Neosycoecus*, descr. ♀, India, ex *Ficus asperima* Roxb. [*F. exasperata* Vahl]); Joseph, 1957, Ann. Soc. ent. France 125 : 119 (*Sycoscapteridea*).

monilifera Westwood, 1883; see synonymy above.

raoi Joseph, 1957, Ann. Soc. ent. France 125 : 117—119, fig. XI (descr. ♂, ♀, India, ex *Ficus carica* L.).

stilifera Wiebes, 1966, Tijdschr. Ent. 109 : 185—188, fig. 91—102 (descr. ♀, N. Borneo, ex *Ficus stupenda* Miq.).

Sycoryctes religiosae spec. nov.

(Fig. 85—101)

Material. — 2 ♂, series 1 ♀, Pusa, Bihar, India, ex *Ficus religiosa*, leg. S. R. DUTT, V.1921 (HSPA, the ♀ holotype, ♂ paratype, and a ♀ paratype slide-mounted; 10 ♀ in RMNH 1125).

2 ♀, *F. relig.[iosa]* ROTHN.[EY], ex coll. S. SAUNDERS 84—31; viz. one dried and one slide-mounted (BM).

1 ♀, Peradeniya, ex *Ficus religiosa* L., STAINFORTH GREEN coll. from Ceylon (OUM), slide Q (Fig. 61, h).

Female. — Head (Fig. 87) shorter than wide across the compound eyes (9 : 11); with scattered short setae, longer towards the epistomal margin. Epistomal margin with a wide median lobe. Longitudinal diameter of the eye one-and-a-half times as long as the cheek. Antennal toruli separated for a distance shorter than their diameter; closer to the epistomal margin than to the inner margin of the eye. Antenna (Fig. 86) eleven-segmented; one anellus; the club three-segmented; the scape five times as long as wide, two-and-a-half times as long as the pedicel; the fourth to eighth segments subequal, with oblong sensilla and long, mainly basal setae. Labial palp (Fig. 91) consisting of two subequal segments; the maxillary palp (Fig. 92) four-segmented (6 : 8 : 3 : 8); the mandible bidentate, with two glands.

Thorax. Pronotum not particularly long; the parapsidal furrows obsolete in the posterior half; the scutellum (Fig. 85) as long as wide, with small setae and fine

reticulate sculpture; the propodeum long, not constricted in the middle, with the usual longitudinal ridges, and with setae next to the subcircular spiracular peritremata. Fore wing (8 : 3), 1.3 mm long; the submarginal, marginal, stigmal, and postmarginal veins approximately in ratio 20 : 6 : 5 : 10; the stigma with four pustules; the membrane, except for the proximal third, with microtrichae; the fringe rather short. Hind wing (5 : 1), 0.8 mm; the membrane as in the fore wing, the fringe longer. Fore leg (Fig. 90): the coxa almost as long as the tibia, with several brown setae on the ventral apex; the femur longer (6 : 5), the tibial armature consisting of: one ventral spur, one antiaxial ventral spine, four conical spines close together in the dorsal angle, and three axial spines close to the spur; five tarsal segments (7 : 4 : 3 : 2 : 6). Mid leg slender; the tibia as long as the femur and trochanter combined, with one ventral spur and two slender spines; five tarsal segments (10 : 5 : 3 : 3 : 4). Hind leg (Fig. 88, 89): the coxa as long as the femur; the tibia longer (14 : 11), with a comb of setae along the ventral margin, and more scattered, dorsal setae, several slender spines close to the ventral apex, two unequal spurs and one antiaxial, conical spine, and about eight conical spines along the apical portion of the dorsal margin; five tarsal segments (21 : 7 : 5 : 4 : 5), the first three of which bear very long dorsal spines.

Gaster. The ninth urotergite more than three times as long as the apparent gaster (25 : 7); no pygostyles.

Length (head, thorax, and apparent gaster), 1.4 mm; 1.2 mm in a small specimen. Colour rather uniform brown, the extremities lighter.

Male. — Head (Fig. 99) slightly longer than wide; compound eyes rather large. Epistomal margin simple, with long setae. The distance between the antennal toruli as large as their distance to the epistomal margin. Antenna (Fig. 95) consisting of ten distinct segments; the scape wide, four times as long as the pedicel; the first funicular segment stalked, suggesting the presence of a very short anellus; the first and third funicular segments distinctly larger than the second, fourth and fifth, with an antiaxial sensillum; the club three-segmented. Labial palp (Fig. 101) consisting of only one long segment; the maxillary palp (Fig. 100) four-segmented (6 : 7 : 4 : 8), the mandible (Fig. 98) short, the apical tooth falcate, the subapical truncate; two glands.

Thorax (Fig. 99) with long dorsal and lateral setae; the pronotum about as long as wide; the mesonotum short; the metanotum and propodeum incompletely fused; the combined length of the mesonotum, metanotum and propodeum as long as the pronotum. Wing remnant rather wide, with long basal and subapical setae. Fore leg (Fig. 93): the coxa, femur and tibia subequal in length; the tibial armature consisting of: one ventral spur, with two stout spines proximad of it, and one distad; several short spines in the dorsal angle, and one apical spine visible in axial view; the tarsus pentamerous (6 : 3 : 2 : 2 : 14). Mid leg rather robust; the tibia (Fig. 94) almost as long as the femur and trochanter combined, with several long, stout spines along the apical half of the ventral margin, along the dorsal margin, and on the antiaxial disc, and two unequal ventral spurs; the tarsus pentamerous (8 : 6 : 4 : 3 : 15), the fifth segment with very long setae. Hind leg (Fig. 96, 97): the coxa almost as long as the tibia, the femur slightly shorter,

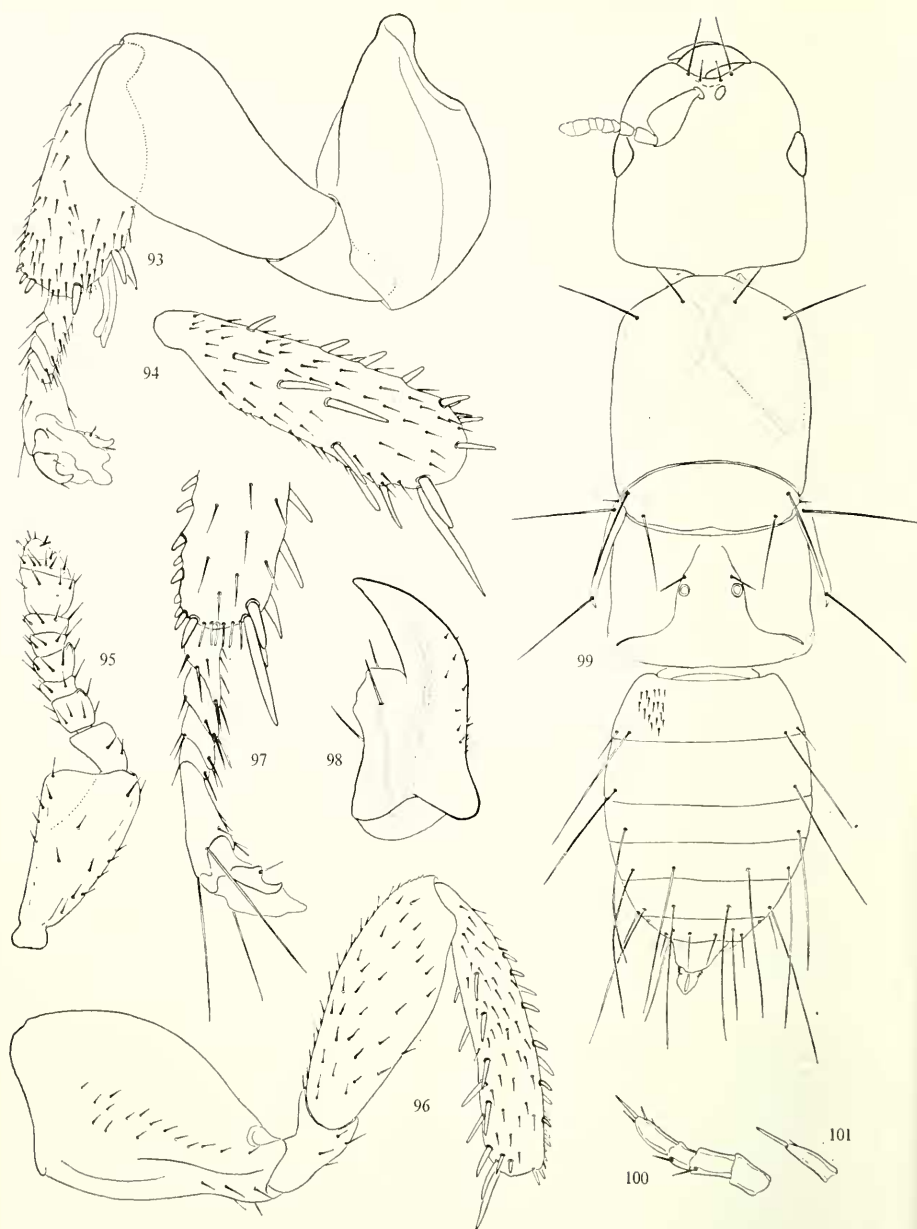


Fig. 93—101. *Sycoryctes religiosae* spec. nov., male paratype. 93, fore leg, anti-axial aspect (pubescence partly omitted); 94, mid tibia, anti-axial aspect; 95, antenna, dorsal aspect; 96, hind leg (without tarsus), anti-axial aspect; 97, apex of hind tibia, and tarsus, axial aspect; 98, mandible, ventral aspect; 99, dorsal aspect of body (short setae on gaster indicated on basal segment); 100, maxillary palp, ventral aspect; 101, labial palp, ventral aspect.

Fig. 93—95, 97, 98, $\times 160$; 96, $\times 100$; 99, $\times 60$; 100, 101, $\times 250$

with scattered setae; the tibial armature consisting of stout spines along the ventral margin and on the antiaxial disc, two inequal spurs, and many shorter spines along the dorsal margin; the tarsus five-segmented (ratio as in the mid leg), the fifth segment with very long setae.

Gaster (Fig. 99): all segments with a close vestiture of short setae, and with very long lateral setae. Claspers of the genitalia with three claws.

Length (head and thorax), 1.2 mm. Colour uniform yellowish brown.

Remarks. — Variation is remarkably slight in the large series of females, and no forms (e.g. such as in *Sycoryctes trifemmensis* Joseph, 1957) could be distinguished. The female is recognized from *S. trifemmensis* e.g. by several small differences in the spines of the fore and hind tibiae (cf. JOSEPH, 1957, fig. VIII 5—6), and by the relatively short ninth urotergite. The male of *S. religiosae* is different from either *S. trifemmensis* and *S. roxburghi* Joseph, 1957, in a number of characters, viz. the number of antennal segments (ten vs. eight), the shape of the head (distinctly longer than wide in JOSEPH's species), the mouthparts (mandible without the distinctly truncate subapical tooth in JOSEPH's species, and the labial palp two-segmented), the presence of a wing remnant, and the spines and setae of the legs: e.g. both JOSEPH's species have dilated hind metatarsi, with long setae, while in *S. religiosae* the hind metatarsus is quite normal, but the fifth segment instead, bears long setae. No mention is made by JOSEPH (1957) of the long setae on the gastral terga, so characteristic for *S. religiosae*.

***Philotrypesis anguliceps* (Westwood) comb. nov.**
(Fig. 76, 102—108)

Sycoscaptella ? *anguliceps* Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 42, pl. 9 fig. 67—75 (descr. ♂, Ceylon, ex *Ficus religiosa* L., leg. G. H. K. Thwaites & J. Stainforth Green); Ashmead, 1904, Mem. Carnegie Mus. 1 : 239, 390 (type species of new genus, *Sycoscapterella* Ashmead); Grandi, 1922, Boll. Lab. Zool. Portici 15 : 102 (not *Philotrypesis*); Grandi, 1930, Boll. Lab. Ent. Bologna 3 : 62 (not *Philotrypesis*).

Material. — 1 ♂, 2 alate ♂, Peradeniya, ex *Ficus religiosa* L., STAINFORTH GREEN coll. from Ceylon (OUM); viz. slide Q: 1 ♂ (Fig. 61, g, now selected lectotype of *Sycoscaptella* ? *anguliceps* Westwood), 1 alate ♂ (Fig. 61, j); slide P: 1 alate ♂ (Fig. 62, a).

9 alate ♂, Pusa, Bihar, India, ex *Ficus religiosa*, leg. S. R. DUTT, V.1922 (HSPA; 3 ♂ in RMNH 1128).

Male (apterous). — Head (Fig. 76) one-and-a-half times as long as wide, the posterior angles produced; with dorsal and lateral setae. Antennal toruli wide apart, situated in a common excavation close to the straight epistomal margin. Antenna eleven-segmented; one anellus; the club three-segmented. Hypostomal margin deeply emarginated; the labial palp two-segmented; the maxillary palp four-segmented; the mandible rather long and falcate.

Thorax (Fig. 76) with some long lateral setae and scattered shorter dorsal setae;

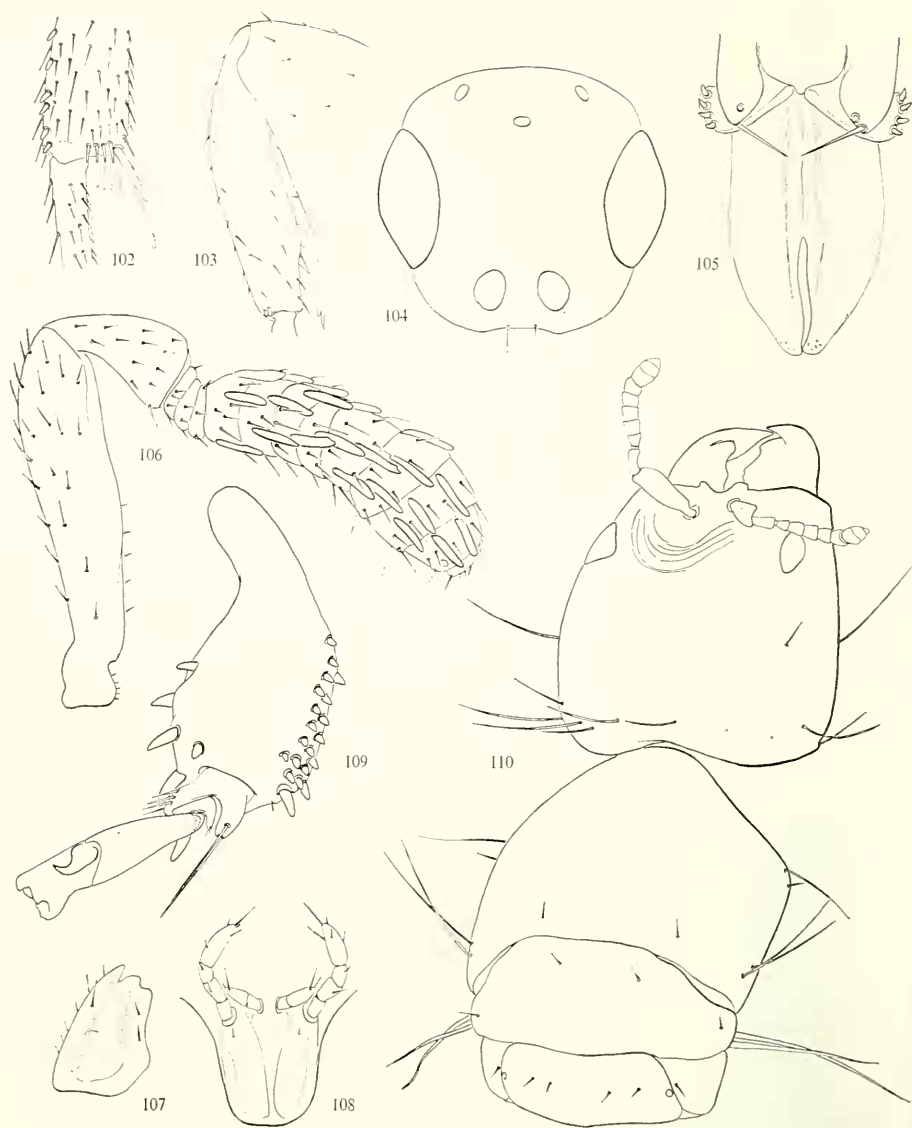


Fig. 102—108. *Philotrypesis anguliceps* (Westwood), alate male from Pusa (HSPA). 102, apex of hind tibia, anti-axial aspect; 103, fore tibia, anti-axial aspect; 104, outline of head, frontal aspect; 105, genitalia, ventral aspect (setae of parameres partly broken off); 106, antenna, anti-axial aspect; 107, mandible, ventral aspect; 108, hypostomal margin, and mouth-parts (labium omitted), ventral aspect. Fig. 109, 110. *Philotrypesis quadrisetosa* (Westwood), male lectotype. 109, hind tibia and tarsus, axial aspect; 110, head and thorax, oblique dorsal aspect. Fig. 102, 103, 107—109, $\times 160$; 104, $\times 100$; 105, 106, $\times 250$; 110, $\times 60$

the pronotum about as long as wide; the metanotum incompletely separated from the metanotum; the propodeum distinctly free, with rather large spiracular peritremata. No wing remnant. Fore leg: the tibia shorter than the femur (5 : 6), with rather stout and long apical spines, and one spur; the metatarsus about twice as long as the second tarsal segment, the second to fourth segments short, the fifth longer than the other four combined, and wider. Tibia of the mid leg as long as the femur and trochanter combined, subclavate, with scattered slender setae along the distal half of the ventral margin; the tarsus pentamerous (7 : 4 : 3 : 1 : 12). Hind leg: the coxa, the femur and trochanter combined, and the tibia subequal in length; the tibia with: one spine in the proximal part of the axial disc, rows of spines along the greater part of the dorsal margin and on the antiaxial disc, two stout spines at half length of the ventral margin, two unequal ventral spurs, and several spines next to the spurs; the metatarsus expanded, with ventral spines and long dorsal setae, the second tarsal segment expanded, with long dorsal setae, the third and fourth segments small, the fifth as long as the metatarsus.

Gaster. The claspers of the genitalia with three claws.

Length (head and thorax), 1.3 mm. Colour uniform yellowish brown.

Male (alate). — Head (Fig. 104) slightly shorter than wide across the compound eyes (10 : 11), the cheek two-thirds of the longitudinal diameter of the eye. Three ocelli in a wide triangle. Epistomal margin faintly emarginate. Antennal toruli wide, their mutual distance larger than the distance to the epistomal margin. Antenna (Fig. 106) thirteen-segmented; three anelli; the club three-segmented; the scape four times as long as wide, three times as long as the pedicel; the funicular segments and the club bear long sensilla, most of which are visible in antiaxial aspect; all segments with scattered long setae. Hypostomal margin (Fig. 108) deeply emarginate; the labial palp two-segmented (2 : 3); the maxillary palp four-segmented (8 : 9 : 7 : 18); the mandible (Fig. 107) small, tridentate, with two glands.

Thorax with several long setae, viz. in the anterior angles of the pronotum, on the parapsides, and on the scutellum; the parapsidal furrows complete. Fore wing (3 : 1), 1.0 mm long; the submarginal, marginal, stigmal, and postmarginal veins approximately in ratio 17 : 9 : 3 : 8; the stigma with four pustules; the membrane for the greater part covered with microtrichae. Hind wing (5 : 1), 0.6 mm long; the membrane as in the fore wing. Fore leg: the femur as long as the coxa and trochanter combined; the tibia smaller (5 : 6), its apical armature (Fig. 103) consisting of two small spines in the dorsal angle, and one ventral spur accompanied by some axial spines; the tarsus pentamerous (8 : 3 : 3 : 3 : 8). Mid leg slender; the tibia as long as the femur and trochanter combined, with one long ventral spur, five tarsal segments (9 : 5 : 4 : 4 : 5). Hind leg rather long; the femur and tibia subequal in length; the tibial armature (Fig. 102) consisting of: two unequal spurs, a row of four antiaxial spines along the apical edge, several slender spines along the axial edge, and about seven short spines along the distal third of the dorsal margin; five tarsal segments (28 : 10 : 9 : 7 : 12).

Gaster. Genitalia (Fig. 105); the parameres with long setae, the claspers with four claws.

Length (head and thorax), 1.0 mm. Colour uniform yellowish brown, the eyes black.

Remarks. — Although somewhat aberrant in the shape of the head, *Sycoscaptella* ? *anguliceps* Westwood certainly belongs in the genus *Philotrypesis* Förster, 1878.

WESTWOOD (1883 a : 43) mentioned three females of *Idarnella* (= *Philotrypesis*) of the sample from *Ficus religiosa*: "two individuals of a green colour, and one fulvous". Unfortunately I did not find any female *Philotrypesis* in the samples studied. WESTWOOD also alluded to a "winged male of a very small fulvous species, with large black eyes, possibly the male of an *Idarnes* [in his sense, one of the Sycoryctini] or *Idarnella* [= *Philotrypesis*]"'. Probably this male is the homomorphous form here tentatively described as the alate male of *Philotrypesis anguliceps* (Westwood).

SYCOPHAGINAE FROM *Ficus exasperata* VAHL

WESTWOOD described one species from the receptacles of *Ficus asperima* Koenig., the correct name of which is *F. asperata* Vahl.

Philotrypesis quadrisetosa (Westwood) (Fig. 109, 110)

Sycoscaptella ? *quadrisetosa* Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 43—44, pl. 10 fig. 76—85 (descr. ♂, Ceylon, ex *Ficus asperima* Koenig., leg. G. H. K. Thwaites & J. Stainforth Green); Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 375—378, pl. 16 fig. 1 (descr. ♀, Ceylon, ex *Ficus asperima*, leg. G. H. K. Thwaites); Saunders, 1883, Trans. ent. Soc. Lond. 1883 : 384 (disc.); Westwood, 1883, Trans. ent. Soc. Lond. 1883 : viii (errata; in new genus *Idarnodes*); Ashmead, 1904, Mem. Carnegie Mus. 1 : 239, 391 (type species of new genus, *Tetranemopteryx* Ashmead).

Philotrypesis quadrisetosa Grandi, 1921, Boll. Lab. Zool. Portici 15 : 95—98, 100, 102 (disc.); Grandi, 1930, Boll. Lab. Ent. Bologna 3 : 50—62, 179 (disc., cat.); ? Joseph, 1954, Agra Univ. J. Res. 3 : 43—51, fig. I, II, V 50—54 (descr. ♂, ♀, Pathanapuram, Travancore, India, ex *Ficus asperima* Roxb., leg. K. J. Joseph, 25.VI.1951).

Material. — 5 ♂, 1 ♀, Peradeniya, ex *Ficus asperima*, STAINFORTH GREEN coll. from Ceylon (OUM); viz., 1 ♂, 1 ♀ (on one slide with 2 ♂ 4 ♀ of *Blastophaga gestroi* Grandi): the male is now designated lectotype of *Sycoscaptella* ? *quadrisetosa* Westwood, and 4 ♂ glued on one card (indicated as syntypes).

Remarks. — The lectotype male (Fig. 110), which on account of its dimensions would belong to JOSEPH's form 1, differs from the description by JOSEPH in a few characters. It has long setae along the lateral posterior margins of the head, and along the lateral margins of the pronotum. The metatarsus of the hind leg (Fig. 109) is shorter than in the figures by JOSEPH (1954 : fig. II 21, V 54); also the dorsal setae of the second tarsal segment are distinctly shorter. There seem to be several other differences, e.g. in the tibial spines of the legs, but the position of the specimen in the slide is such that these cannot be ascertained.

PRELIMINARY CATALOGUE OF THE OTITESSELLINI,
with an attempt at reclassification

The present study of some Otitesellini named by WESTWOOD and WALKER, and additional data on those described by other authors, leads to a reappraisal of the classification, and to the following, preliminary catalogue of the group.

Otitesellini Joseph

"*Otitesella* Westw., *Sycobiella* Westw. ed affini" — Grandi, 1922, Boll. Lab. Zool. Portici 16 : 3—58, fig. I—XXI (gen. and spp. descr. and disc.; key to gen.).

Otitesellini Joseph, 1964, Proc. R. ent. Soc. Lond. (B) 33 : 65 (diagn., 4 gen. incl.); Wiebes, 1964, Nova Guinea, Zool. 27 : 84, table 2 (5 gen. incl.); Wiebes, 1966, Zool. Meded. 41 : 154 (diagn., 7 gen. incl.); Hill, 1967, J. nat. Hist. 1 : 424 (list, 7 gen. incl.).

For convenience, the tribe can be divided into two, admittedly artificial groups. In *Eujacobsonia*, *Lipothymus*, and "*Sycobiella*" *boschmai*, the females show various adaptations for entering the fig receptacle through the ostiole. *Eujacobsonia* has a thoracic rasp of fine spines, and the dorsal apex of the antennal scape is produced; *Lipothymus* has a depressed head, and the hind tibia bears ventral spines; *Sycobiella* *boschmai* has a peculiar comb of spines on the hind tibia. The males of *Eujacobsonia* and *Lipothymus* have the thoracic terga more or less fused, while in *Sycobiella* *boschmai* all segments are free.

In all other genera, the females lack special adaptations for entering the fig receptacle: oviposition probably takes place through the peel of the fig. In one genus, *Otitesella*, the males are rather characteristic, e.g. in having the thoracic terga free, only the propodeum being narrowly fused with the metanotum. In the females of *Otitesella* the pronotum is short, not ample and transverse as in *Walkerella*, and the fringe of the fore wing is short or very short. The males of the other genera have the thoracic terga (meso-, metanotum, and propodeum partially) fused, in its extreme forming a dorsal shield as in *Grandiana*.

The females cannot in all groups be easily distinguished from *Otitesella*. The females of *Grandiana* have a rather short postmarginal vein; *Walkerella* is distinct by the short distance between the antennal toruli; *Micrognathophora* has only one spur on the hind tibia; and *Guadalia* possesses a forked appendage in the mouthparts.

Otitesella, the males of which have free thoracic terga, can for that reason be regarded as primitive; *Sycobiella* *boschmai* then, would seem to be an *Otitesella* adapted for entering the fig receptacle. The remainder of the genera have more derivative males. Here again, *Eujacobsonia* and *Lipothymus* appear to represent groups of females with special adaptations, while their males have not or less deviated from the general type. Special adaptations for life within the receptacle, as shown by the males of several other genera (large antennal scapes, shield-like thoracic terga, large mandibles), even a polymorphism in such adaptations within one species (*Otitesella* *digitata*), make a valuation of the differential characters, and consequently the classification of the group, rather difficult.

A survey of the host records (disregarding some doubtful records) can be

summarized as follows. *Otitesella* is found in figs of the subgenus *Urostigma*, where in sections *Urostigma* (in the Indo-Malayan region) and *Galoglychia* (in Africa), they are the only Otitesellini in the faunae of the host figs. Most of the other genera are found in section *Conosycea* of *Urostigma*: *Walkerella* throughout the section, in various series, in one instance together with *Micranisa*; *Micranisa* in several series, sometimes together with *Walkerella* or *Lipothymus*, the latter of which is only known from series *Subvalidae*; *Eujacobsonia* in series *Validae*. *Pharmacosycea* has representatives of the new genus to be erected for *Sycobiella boschmai*. *Guadalia* is known from *Ficus*, section *Sycocarpus*. *Grandiana* was described from *Ficus* section *Sycidium*, and it was recently recorded from *Urostigma*, series *Crassirameae* of section *Conosycea*. No Otitesellini are with certainty known from subgenus *Sycomorus*.

The group appears to be present in the whole Indo-Australian region and Africa; no Otitesellini are known from the New World.

A classification of any group of fig insects — imperfectly known, and where scarcely a single character can be predicted in common to the two sexes — of necessity is arbitrary to some extent. The classification of the Otitesellini presented here is plainly influenced by chains of affinities. The rather strong correlation found when comparing it with the classification of the host *Ficus* and the associated Agaonidae, shows that at least some of the genera here recognized, probably are natural units. From the host-data I infer that *Otitesella* may extend to other groups of host *Ficus*.

Otitesella Westwood

Otitesella corneri Wiebes and *O. luzonensis* Wiebes should be excluded, and are referred to *Micranisa* Walker. *Otitesella yashiroi* Ishii is a species of *Walkerella*. I presume that *Terastiozoon sanctijohani* Joseph probably is the female of *Otitesella minima* Joseph.

Sycobiella monstrosa Grandi evidently is close to *Otitesella*, but I would postpone a definitive classification until both sexes are known. Tentatively, it is placed below, as an appendix to *Otitesella*.

The host *Ficus* belong to *Urostigma*, section *Urostigma* (all series except for *Orthoneurae*), and for the African species, section *Galoglychia*. One record from *Ficus gnaphalocarpa* Steud. (*Sycomorus*), I consider doubtful.

Otitesella Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 39—40 (descr. ♂, type *O. digitata* Westwood); Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 308—311 (descr. ♂, ♀; key); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 12—18 (descr. ♂, ♀; disc.; key); Joseph, 1964, Proc. R. ent. Soc. Lond. (B) 33 : 65 (type of tribe Otitesellini).

africana Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 310, 311 (descr. ♂, ♀, French Guinea, ex *Ficus vogelii* Miq.); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 29—34, fig. VII—IX (redescr. ♂, ♀); ? Risbec, 1957, Ann. Soc. ent. France 124 : 148 (♀, Madagascar, ex various species of *Ficus*).

ako Ishii, 1934, Kontyû 8 : 91—93, pl. 1 fig. 24—32 (descr. ♂, ♀, Japan, ex *Ficus wightiana* [= *F. superba* Miq. var. *japonica* Miq.]).

cadenati Risbec, 1951, Mém. Inst. franç. Afrique noire 13 : 287—289, fig. 146 (*Colotrechnus*, descr. ♀, Senegal); Risbec, 1957, Bull. Inst. franç. Afrique noire (A) 19 : 264 (in *Otitesella*).

[*corneri* Wiebes, 1967 = *Micranisa corneri* (Wiebes)].

digitata Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 40, pl. 7 fig. 43—51 (descr. ♂, Ceylon, ex *Ficus religiosa* L.); present paper: 420, fig. 63—68 (syn. and redescr.).

epicarioides Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 310, 311 (descr. ♂, ♀, Eritrea); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 21—29, fig. III—VI (redescr. ♂, ♀).

gnaphalocarpae Risbec, 1951, Mém. Inst. franç. Afrique noire 13 : 332—335, fig. 158—159a (descr. ♂, Senegal, ex *Ficus gnaphalocarpa*) [the ♀ described by Risbec belongs to another tribe, probably Sycophagini].

[*luzonensis* Wiebes, 1967 = *Micranisa luzonensis* (Wiebes)].

minima Joseph, 1957, Ann. Soc. ent. France 125 : 126—127, fig. XIV 9—17 (descr. ♂, India, ex *Ficus infectoria* Roxb.); ? Joseph, 1957, Ann. Soc. ent. France 125 : 124, fig. XIV 1—8 (*Terastiozoon sanctijohani*, descr. ♀, India, ex *Ficus infectoria* Roxb.) [*F. infectoria* Roxb. = *F. virens* Ait.].

[*religiosa* Westwood, 1883 = *Otitesella digitata* Westwood].

serrata Mayr, 1885, Verh. zool.-bot. Ges. Wien 35 : 210—211 (descr. ♂, Socotra, ex *Ficus salicifolia* Vahl).

swezeyi Fullaway, 1946, Bull. Bishop Mus. 189 : 204—205 (descr. ♀, Guam).

[*yashiroi* Ishii, 1934 = *Walkerella yashiroi* (Ishii)].

Sycobiella monstrosa Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 311—312 (descr. ♂, French Guinea); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 34—39, fig. X—XIII (redescr. ♂); Risbec, 1951, Mém. Inst. franç. Afrique noire 13 : 335—336, fig. 159b-c (♂, Senegal); Grandi, 1952, Boll. Lab. Inst. Ent. Univ. Bologna 19 : 45 (♂, Senegal, ex *Ficus ovata* Vahl).

New genus for *Sycobiella boschmai* Wiebes

A new genus should be erected for *Sycobiella boschmai* Wiebes, the female of which has, among other peculiarities, a comb of spines on the hind tibia. The male resembles *Sycobiella monstrosa* Grandi, but several small differences, e.g. in the constitution of the thoracic terga, prevent me from classifying *S. monstrosa* here.

As the new genus probably is the same as that, before long to be described by JOSEPH for wasps from *Ficus callosa* Willd.¹⁾ in India, I refrain from naming it

¹⁾ I have some Otitesellini from *Ficus callosa*, collected in Java, that certainly are congeneric with *Sycobiella boschmai*.

here. The host of *Sycobiella boschmai* belongs to the subgenus *Pharmacosycea*, section *Oreosycea*, series *Austrocaledonicae*; *F. callosa* belongs to the same section, series *Vasculosae*.

boschmai Wiebes, 1964, Zool. Meded. 39 : 19—33, fig. 1—5, 9—18, 20 (*Sycobiella*, descr. ♂, ♀, New Caledonia, ex *Ficus dzumacensis* Guillaum.). spec. — (♀, Java, ex *Ficus callosa* Wild.).

Micranisa Walker

Micranisa Walker, in the present paper recognized as the female of *Sycobiella* Westwood, should include several species described in *Sycobiella* and *Otitesella*.

The host *Ficus* belong to *Urostigma*, section *Conosycea*, series *Drupaceae*, *Indicae*, and *Subvalidae*.

Micranisa Walker, 1875, Entomologist 8 : 18 (descr. [♀]; type, sec. Patton, 1884, Proc. ent. Soc. Lond. 1884 : xvii, *Idarnes pteromaloides* Walker); Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 33—34 (*Sycobiella*, descr. ♂, type *S. saundersii* Westwood); Joseph, 1964, Proc. R. ent. Soc. Lond. (B) 33 : 65 (*Sycobiella*, in tribe *Otitesellini*); Wiebes, 1964, Zool. Meded. 39 : 24—25 (*Sycobiella*, notes, key); present paper: 406—407 (disc.).

claviscapa Joseph, 1957, Ann. Soc. ent. France 125 : 127—128, fig. XVI (*Sycobiella*, descr. ♂, India, ex *Ficus mysorensis* Hayne [= *F. drupacea* Thunb. var. *pubescens* (Roth) Corner]). Comb. nov.

corneri Wiebes, 1967, Proc. Akad. Wetensch. Amst. (C) 70 : 133—136, fig. 46—60 (*Otitesella*, descr. ♂, ♀, Sarawak, ex *Ficus sundaica* Bl.). Comb. nov.

luzonensis Wiebes, 1967, Proc. Akad. Wetensch. Amst. (C) 70 : 128—133, fig. 28—45 (*Otitesella*, descr. ♂, ♀, Luzon, ex *Ficus sumatrana* Miq.). Comb. nov.

pteromaloides Walker, 1871, Notes on Chalcidiae 4 : 63 (*Idarnes*, descr. ♀, India, ex *Ficus Indica* [= *F. benghalensis* L.]); present paper: 404, fig. 8—15 (syn. and redescr.).

[*saundersii* Westwood, 1883 = *Micranisa pteromaloides* (Walker)].

Walkerella Westwood

The female described as *Terastiozoon incompletum* Joseph, seems aberrant in the distance between the toruli, and in the incomplete parapsidal furrows. Until it is better known, in both sexes, I prefer to assign it to *Walkerella*.

Otitesella yashiroi Ishii, as a study of the type specimens revealed, should be classified in *Walkerella*.

The host *Ficus* belong to *Urostigma*, section *Conosycea*, series *Validae*, *Indicae*, *Benjamineae*, and *Callophyllaeae*.

Walkerella Westwood, 1883, Trans. ent. Soc. Lond. 1883 : 32—33 (descr. ♂, type *W. temeraria* Westwood); Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 312—313 (*Terastiozoon*, descr. ♂, ♀, type *T. jacobsoni* Grandi); Grandi, 1922,

Boll. Lab. Zool. Portici 16: 39—41, 57 (*Terastiozoon*, redescr. ♂, ♀; key); Wiebes, 1964, Nova Guinea, Zool. 27: 84, table 2 (*Terastiozoon*, in tribe Otitesellini).

benjamini Joseph, 1957, Ann. Soc. ent. France 125: 119—123, fig. XII—XIII (*Terastiozoon*, descr. ♂, ♀, India, ex *Ficus benjamina* L.). Comb. nov.

? *incompleta* Joseph, 1959, J. Karnatak Univ. 4: 98—99, pl. 4 fig. 7—13 (*Terastiozoon*, descr. ♀, India, ex *Ficus arnottiana* Miq.). Comb. nov.

jacobsoni Grandi, 1921, Ann. Mus. Stor. nat. Genova 49: 313—314 (*Terastiozoon*, descr. ♂, ♀, Java, ex *Ficus garcinifolia* Miq. [= *F. subcordata* Bl.]); Grandi, 1922, Boll. Lab. Zool. Portici 16: 42—49, fig. XV—XVIII (*Terastiozoon*, redescr. ♂, ♀). Comb. nov.

temeraria Westwood, 1883, Trans. ent. Soc. Lond. 1883: 33, pl. 4 fig. 9—12 (descr. ♂, India, ex *Ficus Indica* [= *F. benghalensis* L.]); present paper: 402, fig. 2—7 (syn. and redescr.).

yashiroi Ishii, 1934, Kontyû 8: 93—94, pl. 2 fig. 1—5 (*Otitesella*, descr. ♂, ♀, Japan, ex *Ficus retusa* L. var. *nitida* [= *microcarpa* Linn.f.]). Comb. nov.

Guadalia Wiebes

The host of the unique species belongs to *Ficus*, section *Sycocarpus*, series *Theophrastoides*.

Guadalia Wiebes, 1967, Ent. Ber. 27: 214—218 (descr. ♂, ♀, type *G. vissali* Wiebes).

vissali Wiebes, 1967, Ent. Ber. 27: 214—218, fig. 1—21 (descr. ♂, ♀, Solomon Is., ex *Ficus theophrastoides* Seem.).

Grandiana Wiebes

The host *Ficus* of *Grandiana* belong to subgenus *Urostigma*, section *Conosycea*, series *Crassirameae*, and to subgenus *Ficus*, section *Sycidium*, series *Copiosae*.

Grandiana Wiebes, 1961, Nova Guinea, Zool. 14: 245—250 (descr. ♂, ♀, type *G. wassae* Wiebes); Joseph, 1964, Proc. R. ent. Soc. Lond. (B) 33: 65 (in tribe Otitesellini).

corneliae Wiebes, 1966, Tijdschr. Ent. 109: 188—191, fig. 103—121 (descr. ♂, ♀, N. Borneo, ex *Ficus stupenda* Miq.).

wassae Wiebes, 1961, Nova Guinea, Zool. 14: 245—249, fig. 1—19 (descr. ♂, ♀, Terr. New. Guinea, ex *Ficus wassa* Roxb.).

spec. — Wiebes, 1961, Nova Guinea, Zool. 14: 249—250 (♂, Solomon Is., ex *Ficus copiosa* Steud.).

Micrognathophora Grandi

The host *Ficus* is not known with certainty; it may be *Ficus sumatrana* Miq. (*Urostigma*, section *Conosycea*, series *Subvalidae*).

Micrognathophora Grandi, 1921, Ann. Mus. Stor. nat. Genova 49: 314—315 (descr. ♂, ♀, type *M. leptoptera* Grandi); Grandi, 1922, Boll. Lab. Zool.

Portici 16 : 49—50, 57 (redescr. ♂, ♀; key); Wiebes, 1966, Zool. Meded. 41 : 154 (in tribe Otitesellini).

leptoptera Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 315—316 (descr. ♂, ♀, Java, ex *Ficus acanthophylla* Vahl); Grandi, 1922, Boll. Lab. Zool. Portici 16 : 50—56, fig. XIX—XXI (redescr. ♂, ♀); Wiebes, 1966, Zool. Verh. 83 : 31 (note on host record: may have been *F. pseudoacantophylla* Val. = *F. sumatrana* Miq.).

Eujacobsonia Grandi

The host *Ficus* belong to *Urostigma*, section *Conosycea*, series *Validae*.

Eujacobsonia Grandi, 1923, Ann. Mus. Stor. nat. Genova 51 : 105 (descr. ♀, type *E. mirabilis* Grandi); Grandi, 1924, Boll. Lab. Zool. Portici 18 : 23—24 (redescr. ♀); Grandi, 1963, Boll. Ist. Ent. Univ. Bologna 26 : 362 (cat., latest edition); Joseph, 1964, Proc. R. ent. Soc. Lond. (B) 33 : 65 (in tribe Sycophagini); Wiebes, 1964, Nova Guinea, Zool. 27 : 84, table 2 (in tribe Otitesellini); Wiebes, 1967, Zool. Meded. 42 : 107—115 (add. descr. ♀, descr. ♂; host records).

genalis Wiebes, 1967, Zool. Meded. 42 : 109—112, fig. 2, 6—11 (descr. ♀, N. Borneo, ex *Ficus annulata* Bl.).

mirabilis Grandi, 1923, Ann. Mus. Stor. nat. Genova 51 : 106 (descr. ♀, Sumatra); Grandi, 1924, Boll. Lab. Zool. Portici 18 : 24—31, fig. X—XI (redescr. ♀); Grandi, 1928, Boll. Lab. Ent. Bologna 1 : 89 (♀, Sumatra); Wiebes, 1967, Zool. Meded. 42 : 108—109, fig. 1, 3—5 (add. descr. ♀, Malaya, ex *Ficus depressa* Bl.; N. Borneo, ex *Ficus annulata* Bl.; Thailand; southern isl. of Philippines).

spec. — Wiebes, 1967, Zool. Meded. 42 : 112—114, fig. 12—23 (descr. ♂, N. Borneo, ex *Ficus annulata* Bl.).

Lipothymus Grandi

Pairs of *L. sumatranus* Grandi, and of *L. grandii* Wiebes, were found in copula. The host *Ficus* belong to *Urostigma*, section *Conosycea*, series *Subvalidae*.

Lipothymus Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 307 (descr. ♀, type *L. sumatranus* Grandi); Grandi, 1922, Boll. Lab. Zool. Portici 15 : 218 (redescr. ♀); Grandi, 1955, Rend. Accad. Sci. Ist. Bologna, Cl. Sci. fis. (11) 2 : 94—103 (status disc., descr. ♂; host record); Grandi, 1963, Boll. Ist. Ent. Univ. Bologna 26 : 363 (cat., latest edition); Joseph, 1964, Proc. R. ent. Soc. Lond. (B) 33 : 65 (in tribe Otitesellini).

[*bakeri* Joseph, 1952 = *Apocrypta bakeri* (Joseph) Joseph, 1957, Ann. Soc. ent. France 125 : 110].

[*glomeratus* Joseph, 1953 = *Apocrypta westwoodi* Grandi, sec. Joseph, 1957, Ann. Soc. ent. France 125 : 110].

grandii Wiebes, 1967, Proc. Akad. Wetensch. Amst. (C) 70 : 122—125, fig. 1—11, 15—21 (descr. ♂, ♀, Luzon, ex *Ficus sumatrana* Miq.).

sumatranus Grandi, 1921, Ann. Mus. Stor. nat. Genova 49 : 307—308 (descr. ♀, Sumatra); Grandi, 1922, Boll. Lab. Zool. Portici 15 : 218—222, fig. VI—VII (redescr. ♀); Grandi, 1955, Rend. Accad. Sci. Ist. Bologna, Cl. Sci. fis. (11) 2 : 97—103, fig. I—IV (descr. ♂, Java, ex *Ficus involucrata* Bl.); Wiebes, 1967, Proc. Akad. Wetensch. Amst. (C) 70 : 121—122, fig. 12—14 (add. descr. ♂, ♀, Java, ex *Ficus involucrata* Bl.).

sundaicus Wiebes, 1967, Proc. Akad. Wetensch. Amst. (C) 70 : 126—128, fig. 22—27 (descr. ♀, Sarawak, ex *Ficus sundaica* Bl.).

Genera incertae sedis

Dr. D. S. HILL drew my attention to the possibility that *Epicolystichus* Girault and *Paracolystichus* Girault belong to the Otitesellini. The bibliographical data are given below; I do not venture even to attempt a classification of these genera on the very short and incomplete descriptions by GIRAULT. The host *Ficus* are not known.

Epicolystichus Girault, 1915, Mem. Queensland Mus. 4 : 285 (descr. ♀, type *E. aereicorpus* Girault).

aereicorpus Girault, 1915, Mem. Queensland Mus. 4 : 285 (descr. ♀, Queensland).

Paracolystichus Girault, 1915, Mem. Queensland Mus. 4 : 284 (descr. ♀, type *P. compressiventris* Girault).

amplipennis Girault, 1914, Mem. Queensland Mus. 4 : 284—285 (descr. ♀, Queensland).

compressiventris Girault, 1915, Mem. Queensland Mus. 4 : 284 (descr. ♀, Queensland).

REFERENCES

- ASHMEAD, W. H., 1904. Classification of the Chalcid flies of the superfamily Chalcidoidea, with descriptions of new species in the Carnegie Museum, collected in South America by Herbert H. Smith. *Mem. Carnegie Mus.* 1 : i—x, 225—551, pl. 31—39.
- BALTAZAR, C. R., 1966. A catalogue of Philippine Hymenoptera (with a bibliography, 1758—1963). *Pacific Ins. Monogr.* 8 : 1—488.
- CHINA, W. E., 1962. *Cynips caricae* Linnaeus in Hasselquist, 1762 (Insecta, Hymenoptera): proposed validation under the plenary powers. *Bull. zool. Nomencl.* 19 : 160—163.
- GRANDI, G., 1921. Ricerche sul gen. *Philotrypeis* Först. (Hymenoptera — Chalcididae). *Boll. Lab. Zool. Portici* 15 : 33—190, fig. I—XLIV, A-B.
- , 1922. Ricostruzione e morfologia comparata dei generi *Otitesella* Westw., *Sycobiella* Westw. ed affini. *Boll. Lab. Zool. Portici* 16 : 1—58, fig. I—XXI.
- , 1930. Monografia del gen. *Philotrypeis* Först. *Boll. Lab. Ent. Bologna* 3 : 1—181, fig. I—LXXVI.
- HILL, D. S., 1967. Figs (*Ficus* spp.) and fig wasps (Chalcidoidea). *J. nat. Hist.* 1 : 413—434, fig. 1—10.
- HOFFMEYER, E. B., 1933. A new *Callimome* from Denmark with corrections and field notes on other *Callimomidae* (Hym. Chalc.) (*Callimomid studies* 6). *Ent. Medd.* 18 : 246—249.

- JOSEPH, K. J., 1953. Contributions to our knowledge of fig insects (Chalcidoidea : parasitic Hymenoptera) from India III. Descriptions of three new genera and five new species of Sycophagini, with notes on biology, distribution and evolution. *Agra Univ. J. Res.* 2 : 53—81, fig. 1—86.
- , 1954. ContributionsV. On seven species of the genus *Philotrypesis* Först. with a note on unisexual variation and polymorphism. *Agra Univ. J. Res.* 3 : 43—94, fig. I—XV.
- , 1957. Contributions VII. Descriptions of fifteen new and revision of some old species. *Ann. Soc. ent. France* 125 : 97—133, fig. I—XIX.
- MAYR, G., 1885. Feigeninsecten. *Verh. zool.-bot. Ges. Wien* 35 : 147—250, pl. 11—13.
- PATTON, W. H., 1884. Some notes on the classification and synonymy of fig insects. *Proc. ent. Soc. Lond.* 1884 : xiv—xvii.
- SAUNDERS, S. S., 1883a. Descriptions of three new genera and species of fig insects allied to *Blastophaga* from Calcutta, Australia, and Madagascar; with notes on their parasites and on the affinities of the respective races. *Trans. ent. Soc. Lond.* 1883 : 1—27, pl. 1—3.
- , 1883b. On the *Cynips caricae* of Hasselquist and other fig-insects allied thereto; with description of a new species from Australia. *Trans. ent. Soc. Lond.* 1883 : 383—392, pl. 18.
- SCHMIEDEKNECHT, O., 1909. Hymenoptera. Fam. Chalcididae. *Genera Ins.* 97 : 1—550, pl. 1—8.
- WALKER, F., 1871. Notes on Chalcidiae. Part IV. Chalcididae, Leucospidae, Agaonidae, Eucharidae, Perilampidae, Ormyridae, Encyrtidae : 55—70, 6 fig.
- , 1875. Descriptions of new genera and species of parasites, belonging to the families Proctotrupidae and Chalcididae, which attack insects destructive to the fig in India. *Entomologist* 8 : 15—18.
- WESTWOOD, J. O., 1883a. Further descriptions of insects infesting figs. *Trans. ent. Soc. Lond.* 1883 : 29—47, pl. 4—10 (viii, errata).
- , 1883b. Further notice concerning the fig-insects of Ceylon. *Trans. ent. Soc. Lond.* 1883 : 375—381, pl. 16.
- WIEBES, J. T., 1964. Indo-Malayan and Papuan fig wasps (Hymenoptera, Chalcidoidea) 3. Insects from *Ficus conocephalifolia*, with a note on the Sycophaginae. — *Nord Guinea, Zool.* 27 : 75—85, fig. 1—32.
- , 1966. The structure of the ovipositing organs as a tribal character in the Indo-Australian Sycophagine Torymidae (Hymenoptera, Chalcidoidea). *Zool. Meded.* 41 : 151—159, fig. 1—19.
- , 1967. Indo-Malayan and Papuan fig wasps (Hymenoptera, Chalcidoidea) 5. Description of *Otitesellini* (Torymidae). *Proc. Akad. Wetensch. Amsterdam (C)* 70 : 121—136, fig. 1—60.